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General view of the agriculture of the county of Cornwall

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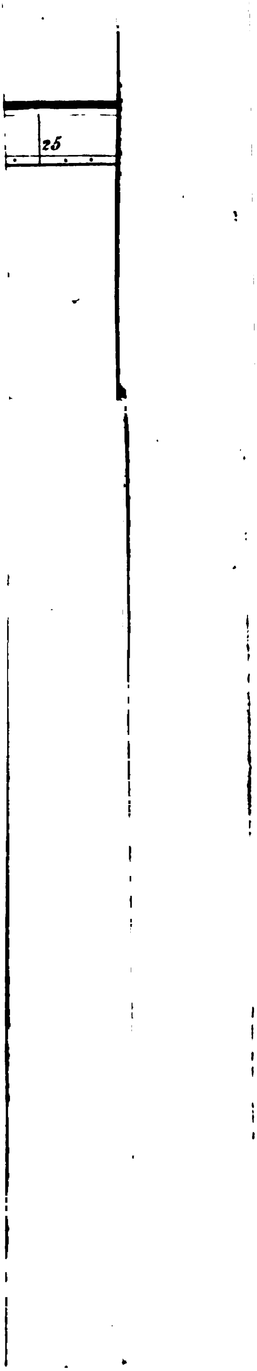
25

GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF CORNWALL.

DRAWN UP AND PUBLISHED BY ORDER OF

THE BOARD OF AGRICULTURE
AND INTERNAL IMPROVEMENT.

BY G. B. WORGAN.

> "Let us go and cultivate the ground, that the poor as well as the rich may be happy, and that peace and plenty may be established throughout our borders."

LONDON:
PRINTED BY B. MᶜMILLAN, BOW STREET, COVENT GARDEN:
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VIGURS, PENZANCE.

1811.

[*Price Twelve Shillings.*]

ADVERTISEMENT.

THE desire that has been generally expressed, to have the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution to reprint such as appear on the whole fit for publication.

It is proper at the same time to add, that the Board does not consider itself responsible for every statement contained in the Reports thus reprinted, and that it will thankfully acknowledge any additional information which may still be communicated.

N. B. *Letters to the Board, may be addressed to Sir* JOHN SINCLAIR, *Bart. M. P. the President, No.* 32, *Sackville-Street, Piccadilly, London.*

DIRECTIONS FOR PLACING THE PLATES.

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ERRATUM.

Page 53, line 14, *for* Plate II. *read* Plate VII.

PRELIMINARY OBSERVATION.

WHATEVER merit may appear in the following attempt, to draw up a statement of the Agriculture of the County of Cornwall, must be attributed to the very liberal and ready communications which I have universally met with in collecting the information and facts contained therein.

From the very extensive and rapid improvements, which have of late years been made in every department of the Agriculture of Cornwall, it is obvious, that the Gentlemen of the County are fully convinced of the utility and importance of this noble science to the community at large.

It seems to be pretty generally admitted, that the adventurous spirit of mining, particularly in the western part of Cornwall, has in some measure withdrawn the industry, attention, and capital, from Agriculture; but since the establishment of that excellent Institution, "The Cornwall Society for the Encouragement of Agriculture and Industry," in the year 1793, no County in England has, perhaps, advanced more in Agriculture, nor exhibited more striking proofs of the beneficial effects to be derived from Gentlemen of property and consequence, and of liberal and enlightened minds uniting with the practical respectable Yeomanry, in promoting rural industry and improvement on the best principles.

I hope it will be found, that I have in this Report approached the object I had constantly in view, a faithful relation of every material circumstance concerning the husbandry of that interesting district.

It has not been in my power to comply with my inclinations and wishes, by calling upon every respectable individual in the County; yet I am convinced of the general good will of all, towards the promotion of the laudable views of so useful an Institution as the National Board of Agriculture.

I beg to return my most grateful acknowledgment to all those Gentlemen, who have so kindly assisted me in my arduous undertaking. To many I feel and profess myself under very particular obligations.

G. B. WORGAN.

Bodmin, Nov. 30, 1808.

TO

THE HONOURABLE

THE

PRESIDENT AND OTHER MEMBERS

OF THE

BOARD OF AGRICULTURE

GENTLEMEN,

ALTHOUGH it be wholly uninteresting to the Public, for us to notice the circumstances which have induced your Honourable Board to place in our hands the materials for the Agricultural Report of Cornwall, yet it may not be altogether unnecessary to give some account of our motives, for undertaking their revision and correction, as well as our qualifications for performing it.

The Gentleman selected by your Honourable Board, to survey the Agriculture of this County, was personally known to us from former communications on agricultural subjects, and occasionally consulted with us in the progress of his work; when therefore it was proposed to us to revise his Papers, we thought we possessed a particular advantage, from the mere circumstance of having some knowledge of his plan and execution.

Besides

Besides this, we have some claim to general qualifications, from much attention to rural economy and long experience in practical agriculture; being also natives, and inhabitants of Cornwall, we are, from local circumstances, intimately acquainted with those peculiar practices which this County, separated as it almost is from the rest of the kingdom, every where presents. Understanding it to be the object of your Honourable Board to collect, and compare the agricultural customs of different counties with each other, we have endeavoured to detail those peculiarities, in as plain a manner, and with as much brevity, as the subject would allow. If we have not omitted any thing material, and have rendered ourselves intelligent, our principal object is attained.

We beg to add, that we believe Mr. Worgan to have been very diligent in collecting materials for his Work. It happened however unfortunately, that he was obliged to perform the greater part of his Survey during winter, by which he not only endured much hardship, but was also forced to take many things upon trust, of which at a more favourable season, he might have been an eye witness. We have taken great liberties with his manuscript, and generally suppressed what was deemed redundant; but after considerable erasements, alterations, and additions, a large portion of the original is preserved; and to obviate the inconvenience of notes and references, we have in some measure identified ourselves with Mr. Worgan in the body of the Work; taking care that wherever we have made observations, or stated facts, for which we alone are answerable; the initials of our respective names are subjoined.

We are,

GENTLEMEN,

With much respect,

Your obedient humble Servants,

Robert Walker.
Jeremiah Trist.
Charles Vinicombe Penrose.

Cornwall, May 1, 1810.

INTRODUCTION.

THE Writer of the following Work requests the Reader will have the goodness to bear in mind, that it is confined to "a general View of the Agriculture of Cornwall." Thus, how the Cornish till their grounds, meliorate their soils; the seeds and plants they cultivate; the herds and flocks they feed; their opinions on the rural arts, and peculiar practices therein, are simply detailed. Other subjects not immediately connected with agriculture, are but slightly noticed. Of the great variety of mineral and fossil productions for which Cornwall has from time immemorial been so famous, a few only are enumerated, Professor Davy having undertaken to draw up in a distinct work, a Mineralogical Survey of his native County.

The Writer sincerely wishes its agricultural history had been drawn up by a man of equal abilities, for certainly, Cornwall is in many respects a highly interesting county; its inhabitants, renowned as a brave*, loyal, and public spirited people; shrewd, sensible, and intelligent. No county has produced more eminent character, either in the polite arts or the learned professions. The women are amiable, for the most part accomplished, and make excellent wives. If Lancashire has its witches, Cornwall has its diamonds, and these too of the most beautiful lustre. From the peer to the peasant there is a mildness and complacency of temper, an urbanity, hospitality, and courteousness* of manners, a noble frankness and liberality of heart, extremely conciliating to the stranger; and what is peculiar to the Cornish, morning, noon, or night, they greet the traveller with an appropriate gracious salutation.

---

* See a Letter from King Charles I. to the Inhabitants of Cornwall, (now extant in many of the Cornish Churches), Appendix, No. I.

This is no novel character of them, but stands recorded as anciently as the times of Augustus Cæsar, and is attributed by Diodorus Siculus, to that frequent intercourse with merchants of foreign countries, which the traffic for their tin could not but occasion. This account, it is hoped, will retrieve the lower orders of people in Cornwall from a very erroneous idea and illiberal aspersion, *that they are nearly in a state of barbarism*. Instances of their civility and benevolence the Surveyor has to report from his own knowledge. Three several nights, in his tour through Cornwall, he missed his road, and was benighted, and each time, in the remotest part of the county, on gently tapping at the door of the cottager, the good man rose from his bed, left his home, and walked with him some miles, nor would leave him until he had conducted him to his place of destination. One of these good christians, on taking leave of him, said, with a countenance that spoke his heart, "Health and a long and happy life to you Sir; and Heaven after death." Can a peasantry who will thus rise cheerfully from their beds at midnight, take the bewildered stranger by the hand, and conduct him safely through dangers, deserve the harsh appellation of *barbarians*?

---

* Queen Elizabeth used to say, "that the Cornish gentlemen were all born courtiers, with a becoming confidence."

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AGRI-

AGRICULTURAL SURVEY

OF THE

COUNTY OF CORNWALL.

CHAP. I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. I.—SITUATION.

CORNWALL forms the most western and southern county of England; "its western termination is the Land's End, and lies in latitude 50° 05′ 0″ N. and longitude from London 6° 0′ 0″ W. Its most southern point is the Lizard, and extends to the latitude 49° 57′ 30″ N. and its longitude is 5° 15′ 0″ W."—*C. V. P.*

Boundaries.—It is bounded by the sea on the north, west, and south, and its eastern end butts against Devonshire. The river Tamar, which runs between the two counties, may, allowing a few exceptions, be called the natural and general boundary of Cornwall towards the east, till it joins the ocean near Plymouth, after a southern course of about forty miles.

Shape.—The annexed Map will shew, that it is in its form, a Cornucopia.

Extent.—The two most distant points of this county are, the north-eastern angle of the parish of Morwinstow, near the source of the Tamar to the east, and the promontory called the Land's-End, in the parish of Sennan, to the west, from which extremities this county measures seventy-eight miles and a half in length *, in a line nearly south-west and north-east. Its greatest breadth extending from the northern point, Morwinstow, on the north, to the Ram-head on the south, is about forty-three miles and a half; its medium breadth, between Padstow on the north, and Fowey on the south, may be about eighteen miles; and its least breadth, from Mount's Bay on the south, to Heyle river on the north, does not exceed four miles. Its computed circumference is 210 miles, and, according to Mr. Martyn's Map, the whole area contains 753,484 statute acres, or 1185 square miles. The population fluctuating between 188 and 189,000, there are about four acres to each inhabitant.

---

* According to Martyn's Map, done from an actual survey.

[To face page 2.

A TABLE

68	62	62	40	56	70	92	59	52	71	99	104	40	49	53	60	85	106	65	41	75	90	109	89	46	50	75	82	65	Exeter, W. F. S.
241	235	235	213	229	243	265	232	225	247	272	277	213	222	226	233	258	279	238	214	248	263	282	262	219	223	248	255	238	London.

A Table of the Statute Acres of every Parish in Cornwall, under their different Hundreds.

Hundred of
STRATTON.

Names of Parishes.	*Stat. Acres.*
Boyton	3710
Maker	1867
St. Mary Magdalen, otherwise *Launceston*	1090
St. Mellion	2410
Menheniot	6047
South Petherwin	4710
Pillaton	1957
Quethiock	3774
Rame	1296
Sheviock	2122
St. Stephens by Laun.	3401
St. Stephens by Saltash	5430
Stokeclimsland	7973

St. Thomas	1750
Tremaine	806
Tresmeere	982
Trewenn	868
Lesnewth	1734
Michaelstow	1338
Minster	2838
Otterham	2694
Poundstock	4304
Tintagell	4001
Treneglоss	2362
Trevalga	1094
Wardstow	3557

TRIGG.

Blissland	6025
Bodmin	5279
St. Breward	8552

Egloshayle	4251
Endellion	3083
Helland	2053
St. Kew	6343
St. Austell	10,018
St. Blazey	1480
St. Clements	3156
Cornelly	1047
Creed	2552
Cuby	2136
St. Dennis	2789
St. Enoder, part of	3434
St. Erme	4155
St. Ewe	5085
Feock	2580
Filley	2179
Fowey	1726
Gerrans	2460

Gorran	4596
St. Just	2340
Kea	7382
Kenwyn	8004
Mabe	2029
St. Martins	2023
Mawgan	4573
Mawnan	1702
Menackan	1371
Milor	3463
Mullion	4663
Perranarwothal	1229
Ruan-Major	2325
Ruan-Minor	628
Sithney	4896
Stithians	3987
Wendron	12,317

PENWITH.

St. Buryan	6274
Camborne	5933
Trigg	54,37[illegible]
Pyder	92,713
Powder	128,115
Kirrier	89,051
Penwith	90,957
	759,681
Subtract part of St. Johns 230, Do Maker 967, which is in Dev.	1197
Total in Cornwall	758,484

SECT. II.—DIVISIONS.

The subjoined Table shews the names and number of the hundreds, into which the county is divided; also, the subdivisions of each hundred into parishes, with their names, and number of statute acres in each parish. It may be added, that Cornwall is situated in the diocese of Exeter.

SECT. III.—CLIMATE.

The general character of the climate of Cornwall, like all other peninsulated situations lying far to the southward and westward, is inconstancy as to wind and rain; and mildness as to heat and cold. Nor is it so subject to thunder storms as some inland counties are. There is a saying in Cornwall, "that it will bear a shower every week-day, and two upon a Sunday." Another usual saying is, "there cannot be too much rain before Midsummer, nor too little after." It is indeed found, that when other parts of England suffer by drought, Cornwall has seldom reason to complain.

Rain.—The cause of more frequent rains in Cornwall than in other parts of England, is, that for three-fourths of the year the wind blows from the intermediate points of the west and the south, which sweeping over a large tract of the Atlantic Ocean, collects and brings with it vast bodies of clouds, which, being broken by the narrow ridge-like hills of the county, descend in frequent showers: but it may be remarked, that the rains in Cornwall, though

frequent,

frequent, cannot be said to be heavy or excessive, and perhaps the quantity may not exceed that of other counties.

Storms.—Cornwall being directly exposed to the whole expanse of the Atlantic Ocean lying to the south-west of it, the winds which blow so frequently from that quarter, bring not only rain, but also produce more violent and frequent storms here than the inland parts of England are subject to. The north-west winds are extremely violent and desolating on the north side of the county, but are generally dry, and bring fair weather.

Effects on Vegetation.—Plants, shrubs, and even the most hardy trees on the sea-coast, sustain much injury from the violence of the westerly wind, and the salt spray of the sea, which it drives with great force before it; hence crops of wheat, and turnips, have been totally destroyed. And they suffer more or less from these evils, in proportion to their distance from the coast. It is evident, that both these causes combined produce the injury; as, after a storm, the plants have their roots much torn, and their leaves corroded and shrivelled as if scorched, and to the taste of a pungent saltness. Trees and shrubs shrink and lean away to the eastward, and appear as if clipped by the gardener's shears. The only shrub which seems to bear the sea air, is the tamarisk. This shrub I observed growing on some parts of the north coast, and it appeared to thrive under every disadvantage. See more of this shrub, Chapter on Fences.

If the vicinity of Cornwall to the ocean occasions some evils, it certainly affords many advantages, highly favourable to the animal and vegetable kingdoms. For the air, passing over the sea, partakes of its mild and equal temperature.

This local character, combined with its southern latitude, and the prevalence of the south-west winds, accounts for the mildness of the climate of Cornwall; so that balm of Gilead, hydrangea, geraniums, myrtles, and many other tender plants and shrubs, live and thrive in the open air.

Snow seldom lies more than four or five days on the coast; and a skaiter may sometimes pass a winter in Cornwall, without being able to partake of his favourite amusement. A kind of languid spring prevails through the winter, which brings forth early buds and blossoms, raising the farmers' and gardeners' expectations, to be too often disappointed by blighting north-east winds, in March, April, and even sometimes so late as May.

With respect to the effects of the climate on the human race, it may be said to be particularly healthy and genial, and there are numerous instances of longevity.

SECT. IV.—SURFACE AND SCENERY.

THE whole county of Cornwall, with a very few exceptions, is remarkable for inequality of surface; ascents and descents follow in rapid succession. Some of the hills are very steep, and tediously prolong a journey. The great post-roads being carried many miles together, over rugged, naked, and uncultivated heaths and moors, the traveller is impressed with a more unfavourable opinion of the county than it deserves.

But he who shall traverse and examine the county of Cornwall, as minutely as the Surveyor, will imbibe different ideas of the general features of the county, which, in many parts, he will find pleasingly broken into hill and dale; some of the valleys are beautifully picturesque, and richly diversified with corn, woods, coppices, orchards, running waters, and verdant meadows.

The admirers of sublime scenery, will be highly gratified to behold the stupendous rocks, which form the great barriers against the ocean, particularly about the Land's-End and Lizard, "filling the mind with awe, and giving rise to those solemn and sublime sensations, which elevate the heart to an *Almighty, all-creating Power*."

The multifarious druidical and Roman remains of karns, rock-basons, cromlechs, circles, religious and military enclosures, dispersed over the county, will be highly interesting to the antiquary; whilst the agriculturist will see much to approve, and much to reprehend.

The north and south parts of the county are divided by a ridge, or chain of hills, running from east to west like a distorted back-bone. The highest hills are Caradon, Roughtor, Brown Willy, and Hensborough; but, of the hills in Cornwall, none have either magnitude or altitude to impress upon my mind the idea of a mountain.

The following heights of the principal hills above the level of the sea, at low water, in the western parts, is taken from the actual survey of Major Mudge.

Heights, above the Level of the Sea at Low Water, of the principal Hills in Cornwall; from Major MUDGE.

	Feet.		Feet.
Agnes (St.) Bacon	621	Hensborough	1034
Bindon	658	Karnbonellis	822
Bodmin Down	645	Karnminnis	805
Brown Willy	1368	Kit Hill	1067
Burian (St.)	415	Maker Heights	402
Cadon Barrow	1011	Pertinny	689
Carratón Hill	1208	Sennan	387
Deadman	379		

In the western parts of the county, and in those districts where the granite, or moor stone prevails, it is not uncommon to see the surface of the ground, for a considerable extent, encumbered with immense detached fragments of the rock, disposed in broad slabs and huge blocks, some rising to a considerable height. Yet such is the industry and perseverance of the farmers in those districts, that they cultivate the intervening soil, using the pick-axe for breaking the ground, where there is not room for the plough.

I have walked through many small enclosures, one third or fourth part of which have appeared to offer insuperable obstacles to cultivation; and yet here and there appear evident marks of fertility, by patches of turnips, potatoes, pilez *, and, in many instances, wheat and barley. Nothing can be conceived more dreary than the surface and scenery which present themselves to the traveller in the mining districts: the principal mines commence about St. Austel, thence, with an interval of rich land, westward to Kenwyn, Kea, Gwenap, Stythians, Wendron, Breage on the south, and to St. Agnes, Redruth, Illogan, Camborn, Gwinear, in a straight line through Lelant, Towednack, and Morvah, to the parish of St. Just.

---

* Nuda Avena.

To the eastward, bordering upon Devonshire, on Hingston Downs, Linkinhorn, and Caradon, there are also mines.

Soils.—The soils of Cornwall may be arranged under the three following heads:

1st, The black growan, or gravelly.

2d, The shelfy, or slaty.

3d, Loams differing in texture, colours, and degrees of fertility.

To attempt to specify these soils severally, with their endless combinations and adventitious differences, would be a hopeless task, as in the same field they are frequently found to vary exceedingly, in the proportion of their several constituent parts. The first consists of a light, moory, black earth, intermixed with small particles of the granite rock, called *growan*, from grow, a Cornish word for gravel.

This soil prevails much in the western parts of the county, and in the large tract of moors, or coarse lands, lying in the neighbourhood of Camelford, Bodmin, Liskeard, Launceston, and Stratton, some of which moors are a true peat. It varies in having more or less of gravel; also, as partaking more or less of a loamy nature; its depth too, varies from three to six or seven inches. It lies on a substratum of yellowish clay. "It is more or less charged with gravel, and therefore called by the Cornish, *growan* (or gravelly), the earthy parts exceedingly light, so that in a dry summer the sun quickly exhales its moisture*, and in a wet summer, or winter, the tilled grounds of this sort have much of the vegetable soil washed away from the grain."—*Dr. Borlase.*

It is rather adapted to the growth of barley, oats, pilez, and grass, than wheat, and is particularly suited to potatoes, of which it bears abundant crops of excellent quality.

This soil, as will be seen by the Map, taken altogether, makes no inconsiderable area of the land of Cornwall. In the parishes of Burian, Sennan, and St. Levan, near the Land's-End, the growan soil is of a very fertile nature, producing large crops of corn of every kind, of red wheat from 40 to 45 Winchester bushels per acre†, of prime barley from 45 to 60, 70, and even 90 have been produced; and of black oats much the same quantities. This productive soil has a mixture of a strong loam with the growan, and is of a hazel colour.

In the parish of Paul, near the two little towns of Newlyn, and Mousehole, this mixed soil is famous for producing two crops of potatoes in one year; its sheltered situation and warm aspect, vicinity to sea weed and sand, concurring with the favourable soil, in giving this peculiar advantage.

The shelfy, or slaty, soil, forming the second class, is by far the most prevalent. It is distinguished by this name, from having a large proportion of the schistos, or rotten slaty matter, mixed with the light loam of which its soil is composed. When the substratum is a schistos, or soft slate, there is a considerable difference in point of fertility, according to the disposition of its laminæ; for, if flat, the surface is more retentive of the manure; but if on its edge, it forms what they call a greedy hungry soil, allowing the manure to wash down through it.

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* It is remarkable, that the grass on growan soils does not burn.

† The Cornish acre is measured by a perch of 18 feet, instead of 16½. It therefore exceeds the statute acre in the proportion of 144:121 of 25:21 nearly; or of 6:5 sufficiently accurate for common purposes.

This soil is not unfrequently mixed with more or less of the quartz, provincially spar, and, according as this prevails, its value is diminished.

A dun, or iron stone, is found in detached spots, forming the substratum, and wherever met with, it is deemed a fortunate circumstance, being a certain indication of the fertility of the incumbent soil.

Loamy soils.—There are some very rich and fertile patches of these soils, interspersed in different parts of the county; the low grounds, declivities, banks of the rivers, and town lands, are composed of them. Some of these are incumbent on a subsoil of clay, and partake, more or less, of it in their composition, forming clay loams.

Clays.—Of these, Cornwall presents endless varieties, in colour and consistence; good bricks are made from some of them. In Lelant parish, they have a kind excellent for making furnaces and ovens. In St. Keverne is yellow clay, used for moulds for casting metals. A clay of a slaty nature, but soapy to the touch, is found near the borough of Liskeard, which has fertilizing powers. But the serpentine with veins of steatite, near the Lizard, are among the most curious of all the earthy substances found in Cornwall.

It is not ranged amongst the clays, but belongs to the talc genus, and is commonly called soap-rock. It is soft, and of various colours, but pure white is most coveted for porcelain, the use to which it is applied. In the parish of St. Stephens Brannel there is a white clay, of which large quantities are shipped annually, for the uses of the porcelain and earthen-ware manufactories.

Stones.—The worst sort of stone, which is found in very many parts of Cornwall, is an opaque whitish debased crystal, provincially (but not properly) called spar *.

This stone is met with so frequently, that there are very few parishes in Cornwall where it may not be picked up, in larger or smaller quantities. It lies loose on the surface, in all sizes, from that of rocks to granules ; in some places it is found a few inches under the surface, like a close pavement. In whatever position, or size, these stones infest the land, it is the prevailing opinion, that until it shall have been, in some measure, cleared, by digging, or ploughing, and picking, little hopes of success can be entertained, even from the best modes of cultivation ; although instances to the contrary may be produced.

Mr. James, of St. Agnes, cleared a large field of spar, by screening the whole mass of spar and earth, as deep as the yellow substratum, in the same manner as masons screen the earth for their mortar ; and the experiment answered well, although it cost 40*l.* per acre ; the land was afterwards let for 3*l.* per acre, and the stones were purchased to make a road. So that this stone has its uses too, being excellent, and not inferior to growan for repairing the roads ; the farmers may have one shilling per cart load for them, for this purpose, and on some of the roads, it were well if a few pounds were expended in applying this material. It also makes a good facing for fences, and, from its angular rough surface, forms a safe pavement in pitch-work.

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* This stone is called quartz by Dr. Pryce, in his Mineralogia Carnubiensis; and is so named by the Germans.

Another stone, very general throughout Cornwall, is distinguished by the name of killas *. It is a schistos, and forms the most considerable substratum in the county. It varies in texture and colour, some being hard, others more friable and laminated; the colours are blueish, yellow, and a ferruginous brown; all the kinds form excellent materials for building.

Both on the north and south coasts of the county there are quarries of slate, which form excellent covering for houses. The famous quarry called Dennybole, near Tintagel, on the north coast, is supposed to afford the finest slate in England. There are other slate quarries, particularly in St. Neot's, St. German's, and Padstow, but of inferior quality.

In some parts are strata of freestone, which, in quality, approach to the Portland stone; these are of great value as materials for building, as is another stone of a coarser texture—the moorstone, or granite.

In the western parts of Cornwall, in the hundreds of Penwith and Kerrier, this latter stone is in great plenty, presenting itself to the traveller in large slabs on all the tors or rocky hills, as well as in the uncultivated moors and valleys; and even in the shelfy, slaty districts, it appears in detached spots. It is of different colours and textures, and is adapted to a great variety of uses. Many of the churches and gentlemen's seats are built with this stone. It is often wrought into columnar masses, eight or ten feet long, which are used as

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* Dr. Woodward says, "we call every stone killas, that splits with a grain."

supporters to sheds and out-houses, as gate-posts, and bridges over rivulets; it is also the material of which common rollers, malting troughs, salting and pig-troughs are made; in short, it is a highly useful stone, and forms an article of commerce.

Naturalists are decidedly of opinion, that this stone is exactly of the same nature with the original granite; there are five sorts, distinguished by their colour, the white, the dusky or dove-coloured, the yellow, the red, and the black, most of them are charged with a brown and bright silvery mica or talc. This stone is an aggregate of feltspar, quartz and mica. Besides these stones of use, Cornwall affords many of ornament, and curiosity; such are some of the marbles, pebbles, flints, serpentine or porphyry, talc, stalactites, and the asbestos and small gems. A great variety of these also present themselves to the curious investigator of fossils; many of them beautiful in colour, some clear and transparent (which have obtained the name of Cornish diamonds), all of them extremely interesting to a mineralogist, but irrelative to Agriculture, the particular subject of this Report.

SECT. V.—MINERALS.

CORNWALL is famous for tin and copper mines; volumes have been written upon them. Iron, lead, and *even gold and silver*, are mentioned among its metallic productions. But husbandry, as the respectable and correct historian of Cornwall, Dr. Borlase, observes, can employ and subsist "a people without mining, but mining can do neither without husbandry. If mining, tempting as it is with the hopes of sudden and immense gain," (and this immense gain falls to the lot of but few individuals, for there are many blanks to a prize), "exceeds much its present limits, agriculture must decay; it is best, therefore, to encourage both, so as that the former may promote the plenty of money, the latter of food and raiment, and both, the happiness of that spot where they meet, and reciprocally relieve, as they do at present, the deficiencies of each other." The Doctor wrote these observations about fifty years ago; Agriculture has since been more attended to. He concludes with a facetious, but no uninstructive story, which Plutarch *(de virtute mulierum)* gives on this occasion. "Pythis, a king, having discovered rich mines in his kingdom, employed all his people in digging them, whence tilling was wholly neglected, insomuch that a great famine ensued. His queen, sensible of the calamities of the country, invited the king, her husband, to dinner as he came home hungry from overseeing his workmen in the mines: she so contrived it, that the bread and meat were most artificially made of gold, and the king was much delighted with the conceit, till at last he called for real meat to satisfy his hunger. Nay, said the queen, if you employ all your subjects in your mines, you must expect to feed upon gold, for nothing else can your kingdom afford."

SECT. VI.—WATER.

NATURE has been bountiful in her supplies and distribution of this blessed element in Cornwall, sufficient for every purpose of life. Springs are abundant on the high, as well as the low grounds, which, gliding away to the vallies, unite, and form numerous streams, rivulets, and some not inconsiderable rivers.

The most considerable are the Tamar, the Lynker, the Looe, the Fowey, the Camel or Alan, and the Fal. The Tamar rises on the summit of a moor in the parish of Morwinstow, the most northern in the county; it immediately takes a southern direction, which, with very little variation, it pursues for a course of forty miles, collecting several tributary streams, when it falls into the spacious harbour of Hamoaze. This river, with a trifling exception, forms the boundary line between Cornwall and Devonshire.

The Lynker rises about eight miles west of Launceston, and after running a devious course of twenty-four miles, it spreads itself into the form of a lake, named Lynker Creek, and joining the Tamar below Saltash, issues with it into Hamoaze.

The Looe rises in the parish of St. Cleer, and running a course of seven or eight miles, meets the tide at Sand Place, and falls into the sea between the two ancient boroughs of East and West Looe.

Fowey Well, near Roughtor, is the source of Fowey river; it flows some miles in a southern direction, meets the tide at Lostwithel bridge, whence it is navigable to Fowey, where it forms a harbour and joins the sea, after a course of upwards of twenty miles.

The river Fal rises near the Roach Rock, and after a course of twelve miles, meets the tide a mile below Tregony, and passing Tregothnan-park, joins Truro and St. Clements Creeks, which are navigable to Truro quay and Tresilian bridge; from its junction with the above creeks, after flowing four or five miles, it forms the principal branches of Falmouth harbour, named Carrik and Kingsroad.

The river Alan, or Camel, the greatest on the north coast, has two sources, one about two miles north of Camelford, the other under Roughtor. These rivers join below Kea-bridge; and after a course of eight or nine miles, meet the tide above Wade-bridge, whence the stream is navigable to Padstow harbour. On all these rivers, as well as on others of less note, great quantities of sea-sand are carried in barges for manure.

Lakes or Pools.—There are three waters in Cornwall which come under this description; the first in point of extent is the Looe, lying between the parishes of Sithney on the west, and Wendron on the east. It may be about two miles long, and one mile broad, formed by a bar of sand, pebbles and shingle, forced up by the sea against this creek by the south-west winds. This bar dams up the waters which come down principally from the Looe river. It is from three, to upwards of twenty feet deep, and affords water for two creeks called Penrose and Carminow. A peculiar and delicious trout is an inhabitant of this lake.

Dozmery.—This is a circular piece of water, lying about four miles north of St. Neot's church, in the parish of St. Cleer; it may be about a mile in circumference, and from nine to fifteen feet deep. It is formed and supplied by waters which drain from the surrounding hills and moory grounds.

Swan Pool—Is about half a mile long, and a quarter wide; it lies between the parishes of Budoc and Falmouth, in the hundred of Kerrier, and is severed from the sea by a bar of sand and shingle. It had its name from the swans kept in it formerly. The eels of this lake are reckoned extremely good.

CHAP. II.

STATE OF PROPERTY.

SECT. I.—ESTATES, AND THEIR MANAGEMENT.

PROPERTY is very much divided, subdivided, and vexatiously intermixed; consequently the proprietors of lands are numerous. Some few accommodations of interchange have conduced to the concentrating landed property, forming those desirable estates, bounded within ring fences, always to their greater profit and improvement. The size of estates varies greatly, perhaps from 20 acres to 500 acres, very few exceeding 400*l.* per annum.

Management of Estates.—Many gentlemen and clergymen in this county occupy their own estates, and glebes; and keep their grounds in a very superior state of cultivation; in the management of which they adopt the most improved modes of agriculture, and afford examples of good management in practical husbandry, which will, no doubt, have the desired effect of inviting and encouraging the neighbouring tenantry to imitation. It is example, not precept, that will instruct ignorance, and dispel prejudice in rural arts and practices; nothing less than ocular evidence will operate conviction and conversion on the minds of the inferior orders to the highly useful sons of Agriculture. The management of great estates is generally given to attornies, acting as stewards. As professional men, they are certainly among the most respectable any county can boast; but, without the assistance of a land surveyor, they must be very incompetent judges of the value and management of estates; the most eminent are aware of this, and are beginning to act accordingly. Some landlords, when their estates are to be new let, set a value on them, and let them for a term of years by private contract; but the most usual custom is to let them by public survey to the best bidder, he giving security, if required, for the payment of the rent, and the performance of the covenants.

SECT. II.—TENURES.

The tenure of the land in Cornwall is generally freehold, excepting lands of ecclesiastical corporations, and ancient duchy land, which is equivalent to copyhold in fee, held under the Duke of Cornwall, subject to a small annual rent. This land passes by surrender in the duchy courts, nearly in the same form as other copyholds. The modern duchy is different from the above; the occupiers are lessees under the Duke of Cornwall, and generally are purchasers of an interest in the land during the continuance of the longest liver of three lives, the consideration being, in part, a fine paid at the time of the grant, and also a reserved rent during the continuance of the lease.

There are three different descriptions of church leases in Cornwall:

1st, One that is merely a demise to a tenant, during the continuance of the longest liver of three lives, the consideration being partly money, and partly a reserved rent.

2dly, A demise to a tenant of a manor, containing many tenements, during the continuance of the longest liver of three lives, as before, with this singular circumstance, that the taker may, during the whole continuance of his lease, underlease to other tenants, by granting copyholds, also for three lives.

3dly, The church also grants another description of leases, viz. for twenty-one years absolute; but it is the usual practice to grant a fresh lease, upon a fine, at the expiration of every seven years, which is a renewal of the original grant for twenty-one years.

The original grant is made in consideration of a fine and reserved rent; but the renewals, at each period of seven years, are in consideration of a fine only, the reserved rent remaining the same.

As to the tenure of tenants, it has been much the custom of the county to grant leases for lives to the tenants, for a term of ninety-nine years, determinable on the death of the longest liver of three lives, to be named by the taker. Upon the death of one of the lives named in the lease, it was usual for landlords to consent to the adding a new life to the two remaining. The consideration in the original grant was uniformly a fine paid in hand, of from fourteen to eighteen years rent of the estate, with a small reserved, or conventionary, rent, and suit and services to the manor court; the renewal generally a fine only of three years rent, for one life, or seven for two lives, without any alteration conventionary rent, which, in certain cases, would vitiate the reversionary lease.

There is a very considerable proportion of the lands of Cornwall now held by the tenantry under these leases; but it is certain, that the number of new grants, or renewal of old ones, is on the decrease; and seldom take place, excepting under some peculiar circumstances affecting the particular estate, or from some particular motives, arising from the situation of the proprietor.

The tenants under these leases (called leasehold, or fine leases) are always subject to all taxes, and repairs of every description, excepting that a small proportion of the land-tax, in some manors, is repaid the tenant, as the land-tax of the reserved rent. Under the property-tax they are rated both as proprietor and occupier, excepting only that the landlord is liable to the property-tax, for his reserved rent. It is not necessary to enter into all the manifold proofs that might be adduced, against the wisdom of this mode of leasing, which is of this peculiar nature, that it seems to be doubtful whether it is most injurious to the lord, the tenant, or the public. But it is necessary to notice it here, as far as it may be supposed to have an effect on the agriculture of the country. It might be argued, from the security and length of possession which this form of demise apparently gives the tenant, that it would be favourable to agriculture; but there is a circumstance which is found in practice wholly to counteract this principle; namely, that in a very large proportion of leases, the tenant not only exhausts, in the original purchase and renewals, his whole capital, but the lease itself often becomes mortgaged for part of the money necessary to complete the purchase. It may be also added, that the money borrowed in this way is not always to be obtained on the ordinary terms of five per cent.: the security of the borrower being imperfect, in point of certainty, the lender not unfrequently compels the borrower to insure the lives; who, through the medium of this caution on the part of the lender, pays at least ten per cent. for his money.

It may be asserted, that generally the cultivation of leaseholders of this description, from the defect of capital, and other causes arising from the speculative nature of the tenure, is necessarily feeble and spiritless, and that they live worse and work harder than any description of inhabitants in the county.

If the landlord does not renew, and the tenement falls into possession, the buildings and fences are generally in a state of delapidation, the executors of the tenant, perhaps without effects, and of course a heavy expense falls on the landlord, to place the tenement in a proper state of repair for a new tenant.

Rack leases are, in general, granted only for the term of fourteen years; except in particular cases, where the tenant undertakes some improvement; when the term, as it ought to be, is extended to twenty-one years.

For the above information on the tenures of Cornwall, I am indebted to the politeness of Francis Gregor, Esq. of Trewarthenic.

The estate hanging, perhaps, on one old life for several years, is, during that period, racked unmercifully, to the great injury of the occupier, as well as of the landlord: to prevent this, the practice of prolonging the term three years after the death of the last life, upon such rack rent as two referees shall name, but subject to the husbandry of the neighbouring rackholders, would be mutually advantageous. Another description of tenure is that of a rack lease for lives, when the tenant pays a rent during one, two, or three lives named by him; in other cases, the letting is of a mixed nature, the consideration being paid partly by fine, and partly by rent.

Entailed Estates.—I was in hopes that I had been a singular sufferer in Cornwall, from this kind of deceptive tenure; it would then not have been worthy of notice; but in my excursions through the county, I have met with fellow-sufferers, and with others who are likely to become so. As such cases have occurred, and may occur again, it behoves every man, who is about to occupy a farm for a term by lease, to make enquiry whether it be an entailed estate or not; because the possessor having the power of letting for his own life only; in case of his death, the occupier is left entirely at the mercy of his successor.

CHAP. III.

BUILDINGS.

SECT. 1.—HOUSES OF PROPRIETORS.

MANY of these are fine old mansions, of very antique structure, the original patrimonial habitations of the respectable ancestors of the present possessors; some of them have been altered, enlarged, and modernized: and, in addition to these, the county is diversified with many beautiful villas, parsonage and vicarage houses, and of late some neat farm-houses. Shelter and water were formerly the principal considerations in choosing their situation, but now many display themselves from eminences, occupying a park or a green lawn, adorned with plantations and shrubberies, commanding beautiful prospects of every description of landscape scenery. The materials are mostly of the killas, and free-stone, or the granite of the county, roofed with the blue slate. In their original structure, the proprietors seem to have regarded convenience, capaciousness, massive strength, and durability, rather than elegance or magnificence.

SECT. II.—FARM-HOUSES AND OFFICES.

MANY of the old farm-houses throughout the county are built with mud walls, and covered with thatch of wheaten straw; the lower divisions consist of a kitchen, and an apartment dignified with the name of parlour, but called (provincially) the *higher side*, a cellar, and dairy-room; but these latter are frequently under a lean-to roof; the rooms very low, not ceiled, and two bed-chambers over: the floor of the chambers are of oak plank; the ground floor, earth, lime-ash, or flag-stone.

The farm offices, built of the same materials, consisting of a barn, cow, ox-sheds, and hog-sties, stand in confusion about the dwelling. The intervening and circumjacent ground is called the farmer's *town-place;* for as to that essential appendage, a regular farm-yard, it is a convenience not often met with, even at this day, in any part of the county.

The modern farm-houses are built upon a more liberal plan, the walls of stone, and the roofs of slate; in the arrangement of the rooms, health, comfort, and decency, have been attended to. The farm offices also, now assume a more regular plan in their arrangement and construction.

The plan adopted in these buildings is, to throw every convenience possible under one roof. The building is called a chall-barn; the ox and cow challs being under the chamber for thrashing the corn.

Four Plans, or sets of very superior Farm Offices, have been obligingly transmitted to the Surveyor, and are hereunto annexed. (See *Plates* I. II. III. IV.)

Explanation of Plate I.

a, feeding place, into which the turnips are carried (the cart being backed into it), and from whence the sheep and oxen are fed.

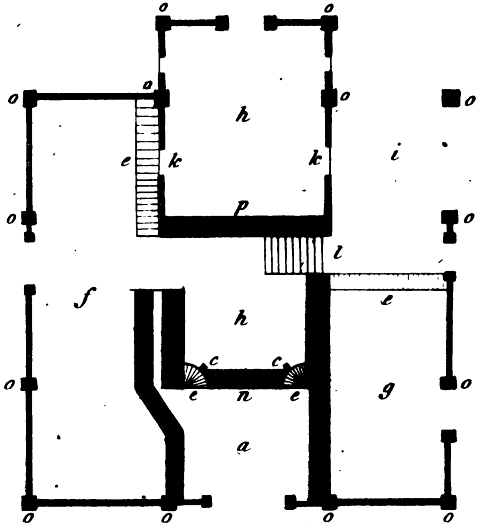
b, place for a yoke of oxen, either for soiling or winter-feeding: the oxen are tied to the posts, *c*, *c*.

d, troughs

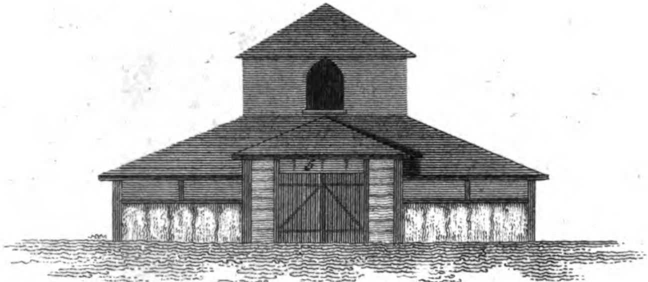
Cornwall

Plate 1 Page 24

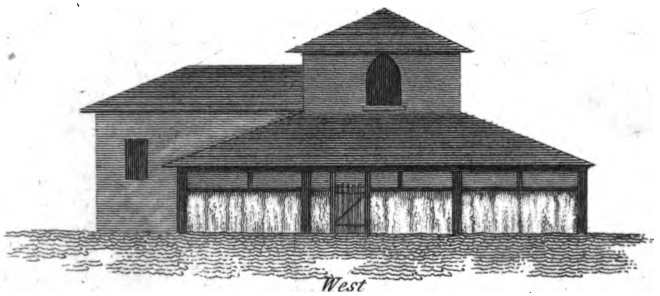
Plan & Elevation of The South & West fronts of Farm Offices placed in the center of a new enclosure of 46 Acres.



South



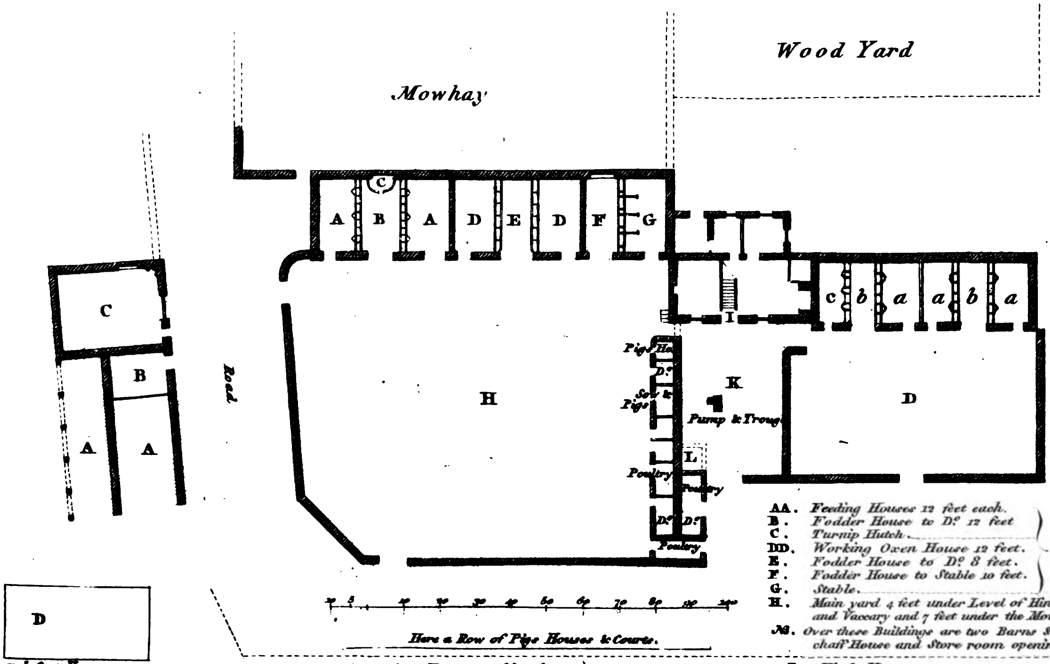
South



West

Neele sc. Strand

THE FARM-OFFICES OF R.L.G. WATKIN ESQ^R. OF KILLIOW.



AA. Feeding Houses 12 feet each.
B. Fodder House to D°. 12 feet
C. Turnip Hutch.
DD. Working Oxen House 12 feet.
E. Fodder House to D°. 8 feet.
F. Fodder House to Stable 10 feet.
G. Stable.
} by 20 Feet
H. Main yard 4 feet under Level of Hinds House and Vaccary and 7 feet under the Mowhay.
NB. Over these Buildings are two Barns Straw Ho. Granary chaff House and Store room opening into Mowhay.

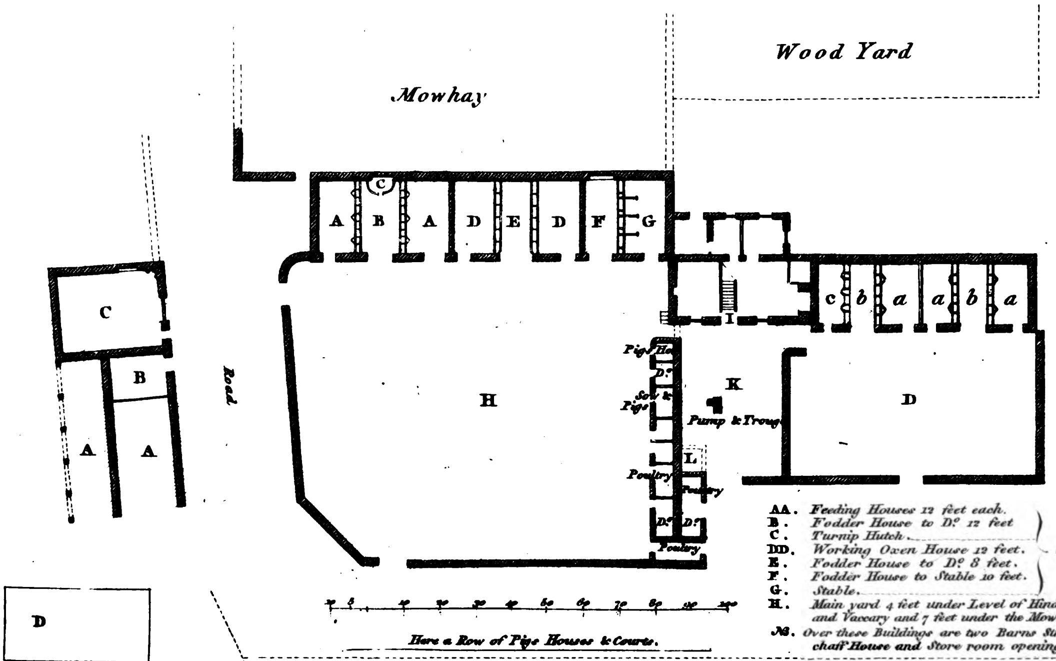
I. Hinds House.
K. Court to D°.
L. Ashes shed.

AA. Wain and Cart Houses.
B. Implement and tool House.
C. Carpenters—Shop.
D. Pond to receive the wash of the yard and to throw it over the Fields below.

a a a. Cows Houses 12 f^t. each.
b b. Fodder Houses 8 f^t. each.
c. Calves House 8 feet.
} 16 F^t. wide.
D. Vaccary Yard.
NB. Any of the Cow's Houses may be parted by a Gate for Cows to lie loose.

Neele Sc. Strand

THE FARM-OFFICES OF R.L.G. WATKIN Esq.r OF KILLIOW.



AA. Feeding Houses 12 feet each.
B. Fodder House to D.o 12 feet
C. Turnip Hutch
DD. Working Oxen House 12 feet.
E. Fodder House to D.o 8 feet.
F. Fodder House to Stable 10 feet.
} by 20 Feet
G. Stable.
H. Main yard 4 feet under Level of Hinds House and Vaccary and 7 feet under the Mowhay.
NB. Over these Buildings are two Barns Straw Ho. Granary chaff House and Store room opening into Mowhay.

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B. Implement and tool House.
C. Carpenter's—Shop.
D. Pond to receive the wash of the yard and to throw it over the Fields below.

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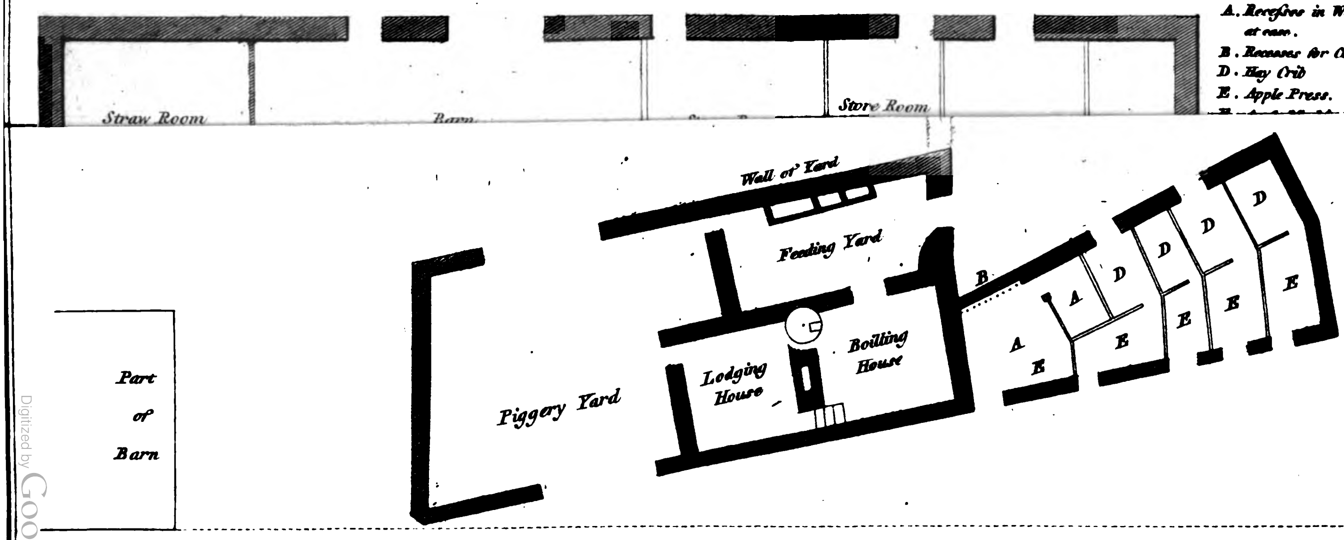
} 16 F.t wide.
D. Vaccary Yard.
NB. Any of the Cow's Houses may be parted by a Gate for Cows to lie loose.

I. Hinds House.
K. Court to D.o
L. Ashes shed.

Neele Sc. Strand

FARM OFFICES,

of the Rev^{d}. R^{t}. Walker of S^{t}. Winnow.



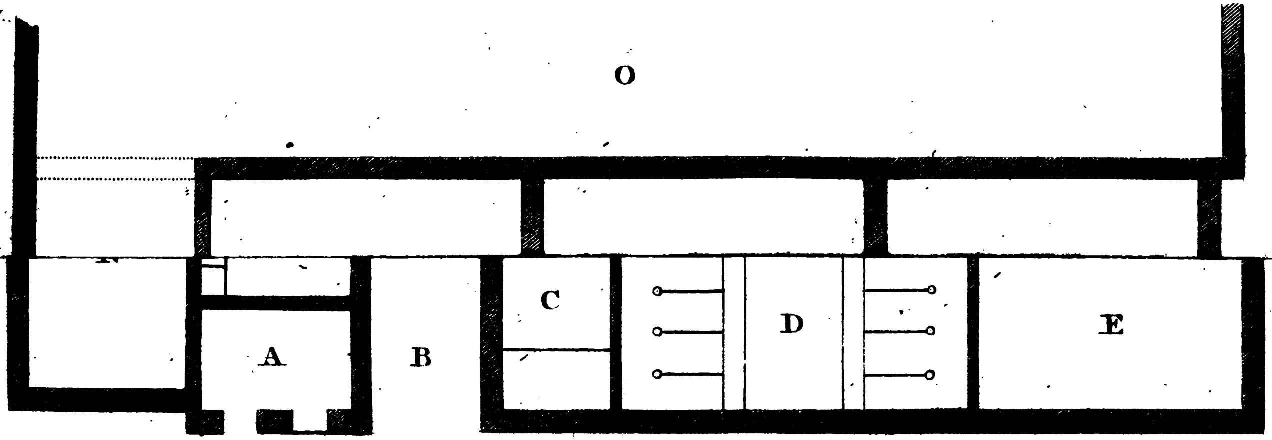
REFERENCES.

A. Receſses in Wall to give room for the Ox'n to lie at ease.

B. Recesses for Corn Binn.

D. Hay Crib

E. Apple Press.

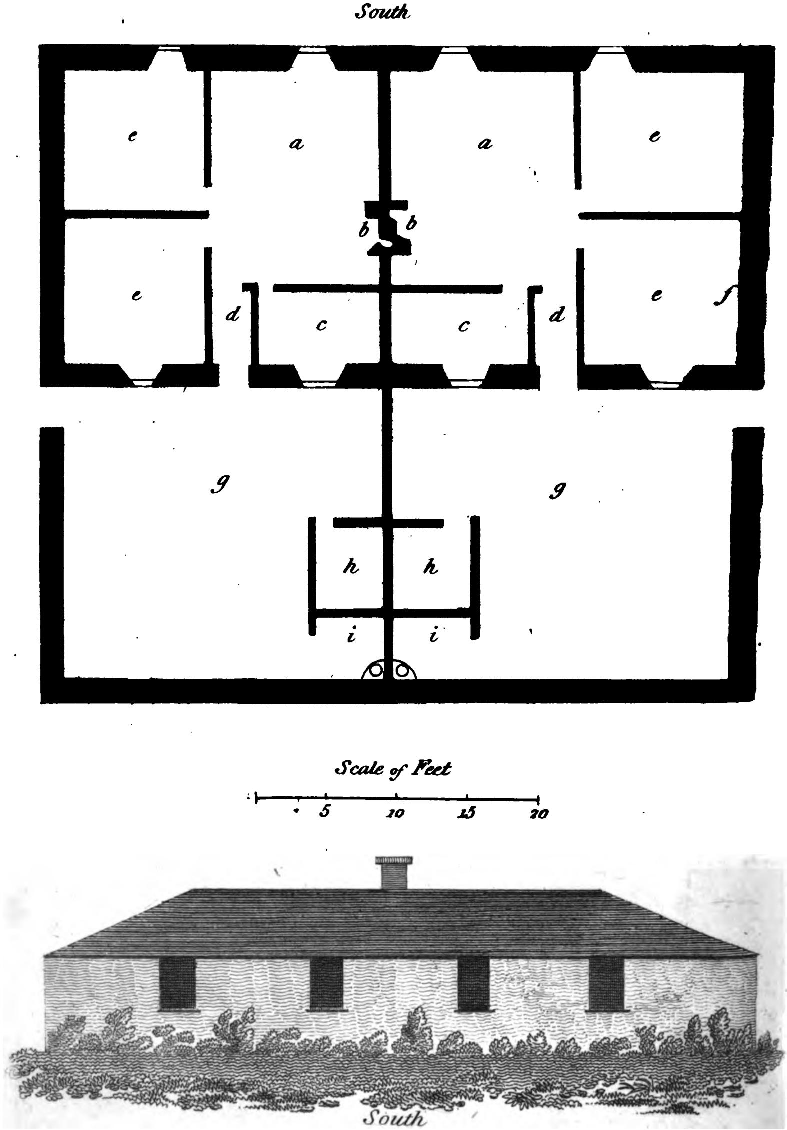


GROUND PLAN of the FARM YARD of FRANCIS ENYS Esq^r at ENYS near PENRYN CORNWALL.

Scale 20 Feet to an Inch

A	Farmer's Room	16 Feet by	12
B	Entrance	20	12
C	Calves House	17	12
D	Feeding House	35	17
E	Implement House	28	17
F	Piggeries	27 Feet by	21
G	Cart Shed	42	27
H	Straw Houses	33	20
I	Threshing Machine	34	20
K	Feeding Houses	34	16
L	Door from the Stables		
M	Farm Stable	34 Feet by	16
N	Coach Houses & Stables		
O	Rick Yard	20	18
P	Intended Granary		

NB Over HH & I are Barns on a level with the Rick Yard one of which is at present used as a Granary

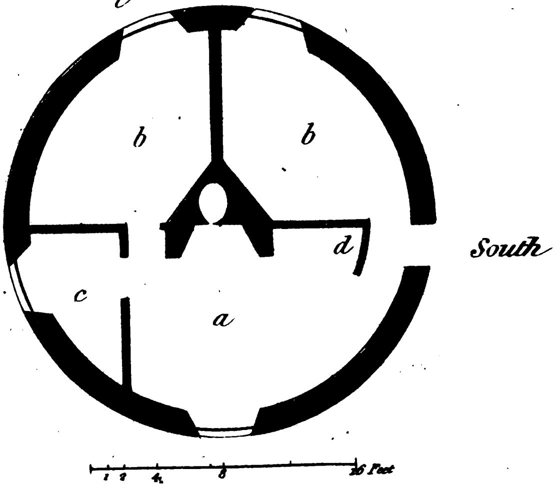


Plan and Elevation of Two Cottages, under one Roof.

Neele sc. Strand

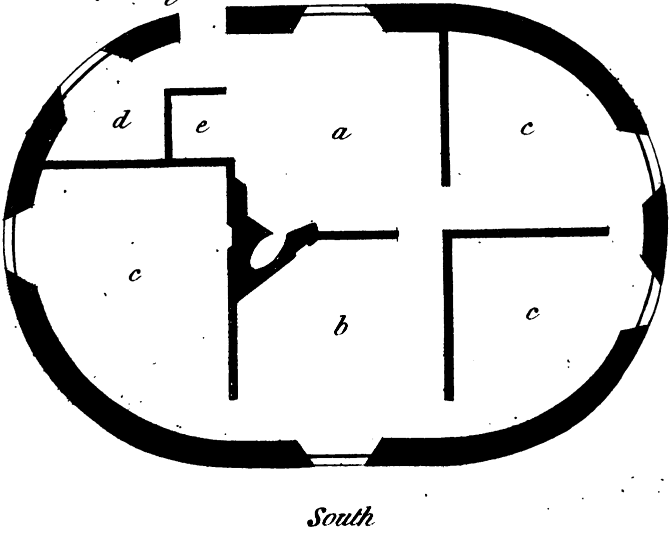
Labourer's Cottage, on a Ground Floor.

No. 1.



A small Farm House, or House for a Gentleman's Hind, on one Floor.

No. 2.



Neele sc. Strand

d, troughs for turnips.

e, cribs, or racks for hay or straw.

f, linney for store sheep.

g, linney, in which half a score sheep are kept to fatten, the number being completed again, as soon as any are sold.

h, fodder-house.—N. B. used as a barn.

i, open linney for tools.

k, hanging doors which bolt inside, and through which the fodder is handed to supply the cattle, and is thus kept always dry.

l, door and staircase leading up to the wool-chamber, which may be seen in the elevation.—N. B. The stairs rise quick, so as to be quite out of the way of the ox feeding on that side the house.

The three walls *m*, *m*, *m*, and the strong post *n*, support and join the centre of the building, and the inner part of the linney roof. The outer part rests on moor-stone posts, *o*, *o*, *o*, and the small posts not lettered, are of wood, to hang gates to.

A communication between the fodder-house and wool-chamber is contrived at *p*, if wanted. Should the fodder-house be used as a barn, the wool-chamber would make a good granary.

The outsides of the linnies are formed of coarse slate stones, with a frame of wood at top, leaving an open space of about 18 inches, as shewn in the elevation; where *r*, *r*, are gates to admit the turnip cart; above them is a board, *s*, hung upon hinges, to lift up to admit the top of the load.

The gates are much stronger for being so much lower. The sides of the fodder-house are framed with deal; and the outsides covered with slate stones, screwed on. The materials with which such a building is to be made, must depend on local circumstances; but I do not think so many conveniences can be procured any where, on a cheaper plan.

The ease with which one person can attend to so many animals, is a great advantage.

The building is placed in an oblong court of a quarter of an acre, well fenced round.

I use the wool-chamber at present, as a room for myself, from which I can overlook all my farm. When a farm is detached from the dwelling, such a room is of great convenience.

N. B. The floor of the wool-chamber is 18 inches lower than the top part of the linney roof.

SECT. III.—COTTAGES.

It may be truly said, these are very humble dwellings indeed; of the same materials as the old farm-houses, with only two or three apartments, the upper one immediately under the thatch. I had occasion often, in my dreary walks, during my Survey, to take shelter in some of these miserable dwellings, and found the poor inhabitants busy in placing their bowls, crocks, and pans, to catch the waters pouring in at the roof. I am not saying, nor do I mean even to imply, that it is the general state of the cottages in the county; but were there only six in this wretched state, they are too many: the poor labouring man should at least have a dry, warm, weather-proof home to retire to, after his hard day's work, and a dry bed to lie down upon to take his rest. However, the meanest cottage generally has that great source of comfort, a garden, attached to it.

The annexed Plans of Cottages, (see *Plates* V. VI.) have been presented by Capt. V. Penrose, of Ethy.

References to the annexed Plan and Elevation of two Cottages under one Roof. (Plate V.)

a, common room, or kitchen.

b, fire-place and oven, which must be formed according to the nature of the fuel to be consumed.

c, pantry. Should a cottager's family be very large, it may be necessary to give up the convenience of a pantry, and make this a bed-room.

d, porch, or entry, with two doors, to add to the comfort of the kitchen.

e, bed-rooms. When the materials of which the wall is built will admit, it is adviseable to make a recess, as shewn at (*f*), for the head of each bed, as it will add much to the space at the foot.

The floors of the bed-rooms are raised two or three inches above the floor of the kitchen, that no wet may run into them.

It is to be remarked, that the partitions between the kitchen, and bed-rooms, and pantry, do not go quite up to the roof; by which means there is a free circulation of air throughout, and all purified by the fire in the kitchen.

f, the top of the *porch;* is closed at top.

g, court to contain the fuel, and other things; a pump in it, if possible.

h, pigs'-house.

i, bog-house.

It would, perhaps, be proper to allow a little extent of shed between the pigs'-house and dwelling-house, to serve as a roost for poultry, to keep the ashes dry, and to put tools, &c. under cover.

I add the elevation of the south front, before which I would, if possible, place the gardens; by which means such cottages would become the most satisfactory and beautiful ornaments of a country.

Perhaps single cottages may, on the whole, be the best, to prevent all possibilities of dispute between the inhabitants of such as are under one roof; however, we have here nothing in common, and economy is much attended to, as the middle wall and chimney serve for both cottages *. Both single and double cottages have been built on this plan; and, I think, that this double cottage might easily be converted into a good house for a small farm, by opening a door between the two kitchens.

The roof of my cottage is slated, and plastered against the pin, which keeps the house warm. The height of the kitchen not only greatly tends to prevent the chimney from smoking, but enables the inhabitants to hang up their bacon, &c. out of the way of themselves and furniture. From the best information I can obtain, I find that there is very little difference of expense between a cottage upon one or two floors, with equal accommodation in each; I determined in favour of one floor, for the following reasons:—It is much easier kept clean; much less liable to accidents from fire; more wholesome, from the loftiness of the rooms; above all, the superior convenience to old or infirm persons, who can be attended to with much more ease on one floor, and can be taken into the open air, by assistance, that could never move them up or down stairs. Many old people are confined to their rooms, and young people kept from their labour to attend

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* There must be a separate flue for each fire-place.

them, which need not be the case, if living in a house of one floor.

Explanation of Plate VI.

Fig. 1, *Labourer's Cottage, on a Ground Floor.*

a, kitchen, with wide fire-place and oven, calculated for the fuel used by a Cornish cottager. This fuel requires, what is termed, the wood corner, to hold the immediate supply.

b, *b*, bed-rooms.

c, pantry.

d, wood corner, the partition between which and the entrance-door, serves also as a shelter for the fire-place.

The foundation of this cottage is stone, which continues several inches above the floor; the walls above this are of cob, seven feet high;—the partitions between the rooms lath and plaster, eight feet high;—the roof slated, and plastered against the pin.

This cottage has been well finished according to the plan, and of the materials above mentioned, by Mr. Hugh Rowe, builder, in Lostwithel, for 42*l*. the carriage of every thing, except the stones for the foundation, included.

The bed-room windows front the east, for the sake of the morning sun; and the kitchen, to the west, enjoys the evening sun as long as possible.

Fig. 2, *A small Farm House, or House for a Gentleman's Hind, on One Floor.*

The materials and mode of building to be in all respects similar to those of the mud cottage, and the estimate given me by the same builder is 89*l*.

a, kitchen.

b, parlour.

c, *c*, *c*, bed-rooms.

d, dairy.

e, wood corner, above which is a safe, or small pantry, with lattice-work towards the entrance-door.

N. B. For a more extensive farm, I would build my house on the same plan, and have the wash-kitchen, and other requisite offices, in a detached building.

CHAP. IV.

MODE OF OCCUPATION.

SECT. I.—SIZE OF FARMS.

THE divisions and subdivisions of the lands in Cornwall, are such as may accommodate every description of men, who for business or pleasure, are disposed to employ their capital in rural concerns; from the barton of three or four hundred acres, down to the mere cottage-holding of three or four acres.

The largest farms which I have heard of, are those of Norton, in the hundred of Stratton; Roscarrock, in the hundred of Trigg; Trerice, in Pyder, and Bodrigan, in Powder hundred. The first of these comprises about 900 acres; the three latter are bartons of six or seven hundred acres each.

Mr. Dayman is very correct in his observation, "that the large farmers are possessed of a much superior breed of cattle to the smaller; their operations are conducted with much more spirit, and their farms better cultivated; and while these are getting rich, the little farmer finds it difficult to pay his rent, rates and taxes, and maintain his family." There is an instance, however, of a farm in the hundred of West, which consisted of 600 acres: it was divided into three farms, which now grow twice the quantity of corn, keep twice the number of cattle, and pay upwards of twice the rent it did, when in a single farm. It may be said that there are more farms in Cornwall of from *30l.* to *50l.* a year, than of any other description. In the western parts the farms are very small indeed, and very high rented.

The lands in Cornwall draw a much greater rent than those in other counties, of equal quality. Rents have been doubled, and many trebled, within the last twenty years.

SECT. II.—RENT.

The rental of the whole county may fluctuate between 5*s*. and 50*s*. per acre, of farms properly so called.

Circumstances which affect rents, beside quality of soil, and aspect, are, their vicinity to sea-sand and to market-towns. There are instances of lands letting at very high rents in particular situations. A gentleman informed the Surveyor, that land about Penzance, *lets* for 13*l*. per acre. The rent of lands sometimes, in the same parish, varies from 8*l*. to 5*s*.; nay, even on the same farm, not exceeding 150 acres, some parts are worth 50*s*.; others not 5*s*.

Taxes were formerly generally paid by the landlord; but of late years, the tenant is usually bound to pay all taxes and assessments, the land tax often excepted. The tithes are almost every where considered as a tenant's tax.

SECT. III.—TITHES.

The great, or sheaf tithes, are for the most part the property of laymen, and are by them farmed out to persons called proctors. The small tithes, which comprise all tithable things, except corn, are in the hands of the Clergy, who in general compound at 1*s*. to 1*s*. 6*d*.

in the pound of the rent, for vicarages; and for rectories, where the great tithes also belong to the clergyman, from 2*s*. 6*d*. to 3*s*. 6*d*. in the pound. In general it may be observed, they are compounded for on very moderate terms, when held by the Clergy; when held by a layman, they are sometimes taken in kind, but generally valued, and agreed for in the field about the time of harvest.

SECT. IV.—POOR-RATES.

THESE, as in other parts of the kingdom, have been some years on the increase:—for a specimen of the progressive increase, in an agricultural part of the county, see the Table of Population and Rates of the Parish of Veryan.

In the mining parishes the estates have been so burthened with poor-rates, in scarce seasons of grain, or when employment for the miners has failed, as to be of little value to the proprietors, and the remedy has been resorted to, of calling upon the hundred for aid.

Carding and spinning were formerly found profitable employments for the female poor; and to the total decline of this business must, in some measure, be attributed the progressive increase of the rates in this county.

"Thirty-five parishes and places maintained all, or part, of their poor in workhouses. The number of persons so maintained during the year, ending Easter, 1803, was 397; and the expense incurred there amounted to 3211*l*. 17*s*. 2¼*d*.; being at the rate of 8*l*. 1*s*. 9¾*d*. for each person maintained in that manner."

"The number of persons relieved out of workhouses, was 12,456; besides 1962, who were not parishioners. The expense incurred in the relief of poor not in workhouses, amounted to 51,437*l.* 18*s.* 2*d.*; a large proportion of those, who were not parishioners, appear to have been vagrants, and therefore it is probable, that the relief given to this class of poor, could not exceed 2*s.* each, amounting to 196*l.* 4*s.* This sum being deducted from the above 51,437*l.* 18*s.* 2*d.* leaves 51,241*l.* 14*s.* 2*d.* being at the rate of 4*l.* 2*s.* 3¾*d.* for each parishioner relieved out of any workhouse."

"The number of persons relieved *in* and *out* of workhouses, was 12,853: besides those who were not parishioners, excluding the expense supposed to be incurred in this class of poor, all other expenses relative to the maintenance of the poor, amounted to 57,500*l.* 3*s.* 11¼*d.* being at the rate of 4*l.* 9*s.* 5½*d.* for each parishioner relieved."—*J. Dayman.*

SECT. V.—LEASES.

"LEASES for years, determinable on lives, have been already mentioned. The rack-rented farms are mostly held for terms of fourteen years, a few for twenty-one years, and still fewer for seven. The time of entry, in the eastern part, Lady-day; in the western, Michaelmas.

Heads of a Lease used in the Western Part of the County, which, with a slight Alteration, contains the same Covenants used in the Eastern Parts.

The usual exceptions of woods, mines, game, &c.;—tenant covenants to repair all, except the slated roofs, and walls not covered with thatch;—to pay all out-goings, except generally, the land-tax and conventionary rents;"

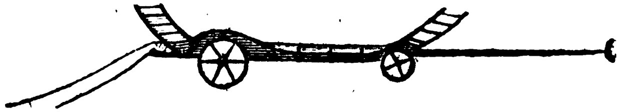
—not to cut any wood, &c. for fuel, but at the proper season; when hedges are cut, properly to plash and cast the same;—not to carry off any corn in the straw, or manure; and, where the term ends with Michaelmas, to thrash out the last year's corn on the premises, for which he has the joint use of the barn for six months; —to provide, sow, and harrow in, with the last year's spring corn, from five to eight pounds of clover, and from four to twelve gallons of ray-grass, (provincially ever-grass), and to give the landlord notice of the tillage;—on every breach for tillage, to take only two crops of corn in succession, the second always of barley or oats; to be sown with grass-seeds, and the land to remain in grass the two or three succeeding years; and, on every fresh breach, to carry from four to fifteen (according to distance) cart-loads of sand, with other manure, or forty double Winchesters of lime, according to circumstances, per acre;—to manage the premises generally according to good husbandry, and not to commit any waste thereon;—to leave a fifth part of the farm in grass three years before the end of the term, and permit the landlord to prepare the same for wheat, and carry manure, &c. accordingly, and to use all the dung, &c. on the premises;—not to cut any part of the premises for hay more than once in the three last years; and if cut oftener than once in three years, to manure after every such cutting;—not to assign or underlet without the consent of the landlord;—usual proviso for re-entry on non-payment of rent, or non-performance of covenants, &c. In places where orchards are cultivated, tenant covenants to keep them in good order, and to plant fresh trees (to be provided by the landlord) in the room of those decaying. The reader is desired to bear in mind, that this lease is not given as the model of what ought to be, but of what are the covenants, under which estates in this county are most commonly held."—*J. Dayman.*

"Of late, some proprietors, or rather, perhaps, their stewards, in order to obtain a certain clear rent, have thrown the whole burthen, both of taxes and repairs, upon the tenant; but it may fairly be doubted, whether the plan be ultimately beneficial to the proprietor, as it can hardly be expected that the tenant will do more than patch up the walls and roofs, that they may last to the end of the term, when the landlord will probably have the option of sitting down with dilapidated buildings, or of going to law with the former tenant."—*R. W.*

CHAP. V.

IMPLEMENTS.

Carriages.—No county affords a greater variety of wheel and other carriages than Cornwall. In most parts of the county may be met with the waggon, the wain, one and two-horse carts, the ox-butt, gurry-butt, slide, and sledge. Their construction varies according to their intended uses. The waggons used for the conveyance of coals, lime, or sand, are made strong, and very close boarded, and carry from thirty to forty Winchester bushels of coals, or lime. I have seen smaller waggons on some few farms, particularly adapted for carrying sand; these are mounted on lower wheels than the large waggons, and hold about thirty Winchester bushels; they are drawn either by oxen or horses, or by both. But a waggon peculiar to Cornwall, is a light and really elegant carriage, used for carrying corn and hay in harvest time, also for faggot wood, as well as for other purposes: The body is open, a lade of five bars fixed before and behind, gives it great length, and an arch over the hind wheels gives it breadth; the fore-wheels turn clear under the body, so that it can sweep round in a very narrow compass; the load is secured by two ropes, tightened by a winch fixed behind the waggon; it carries about 300 sheaves of corn. A tongue (or middle) tree, or shafts, are alternately fixed to the axle of the fore-wheels, as it is meant to be drawn by oxen or horses. I am much disappointed, that I have not been able to obtain a drawing of this useful light carriage, which deserves a place on every farm in the kingdom, of which this is an imperfect sketch.



The wain is another light useful carriage, for carrying corn and hay; it consists of a light open long body, borne upon two wheels; a railed arch over the wheels prevents the load bearing upon them; it will carry from 200 to 250 sheaves, which are secured by ropes, as in the waggon. Mr. J. Dayman has very obligingly given a drawing of this carriage, and describes it thus, "The Cornish wain" (a sketch of which is given, *Plate* VII. *Figs*. 3 & 4; scale, a quarter of an inch to a foot) is an admirable implement for clearing hay, or corn fields, and, when well constructed, the best, I think, for that purpose yet invented. It is also cheap, as the shafts and wheels of a cart (see *Fig*. 4) may be used with it, and, of course, the only additional expense is the body. At (*a*) is shewn the wings, which prevent the load from choking the wheels; and at (*h*), a roller, with a hole in it, in which is fastened the rope which crosses the load, and, taking a turn round the crook (*c*), returns again to the back of the machine, and then forward to the other side, where it is fastened; the whole is then drawn tight by the roller, which is wrought by two iron handles in the manner of a smith's vice. These are made with either tongue-tree, or shafts, as designed for oxen or horses.

Another simple carriage for corn, hay, or faggot-wood,

Cornwall

Plate. VII. Pa. 38.

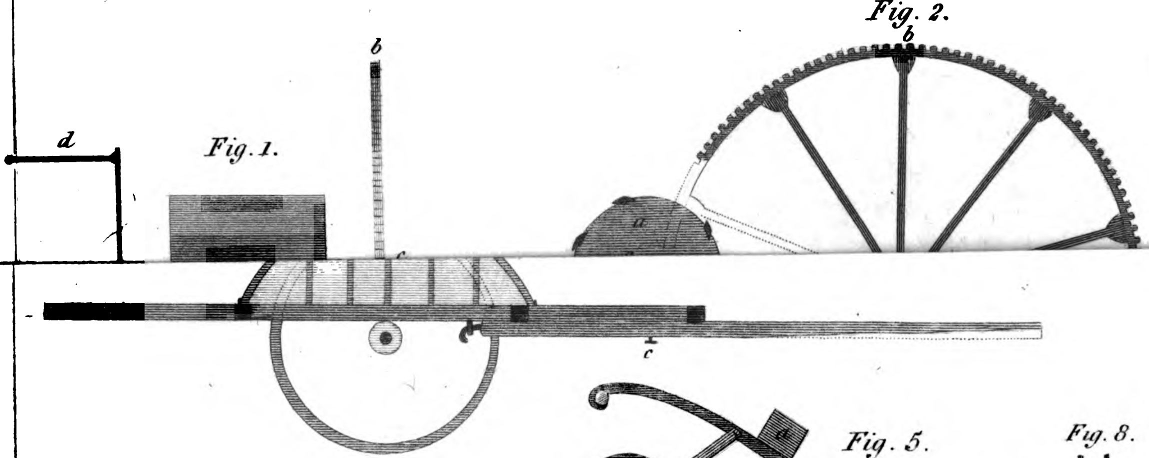


Fig. 1.

Fig. 2.

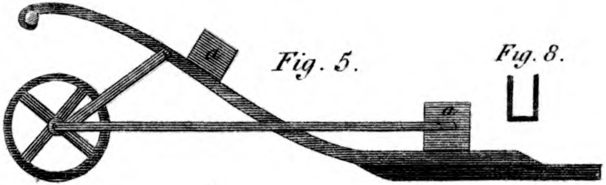


Fig. 5.

Fig. 8.

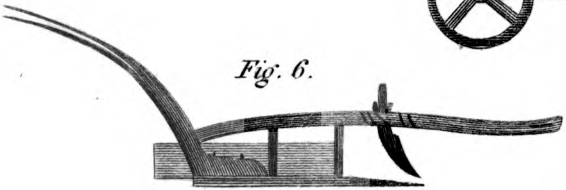


Fig. 6.

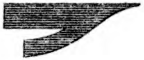
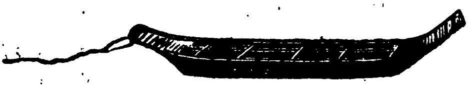


Fig. 7.

Jn.o Dayman del.t

Neele sculp.t

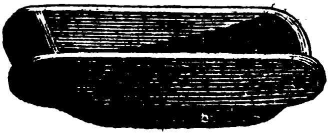
wood, is the sledge, or dray. This is met with on most farms; it consists of two strong side-pieces of this form,

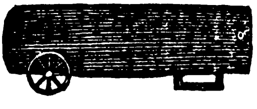


having five, six, or seven cross bars mortised in; it is shod with thick rough pieces of timber: to some, two low wheels are fixed. These, either with or without wheels, are found to be handy carriages for various purposes on the farm, and are drawn by oxen or horses. Carts are of various constructions, and in general use throughout the county; they differ as to dimensions, weight, and workmanship; many are built upon good principles.

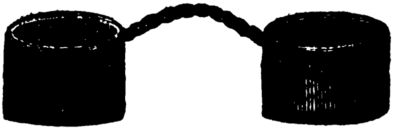
The ox-butt is a kind of cart, of long standing in Cornwall, always drawn by oxen in yokes; its body is nearly an oblong square; many of them have a heavy iron axle fixed to one wheel, the other one turning round upon it, by which the draught is, of course, very much increased. Some farmers are still partial to this old-fashioned construction, and shrewdly remark, that it favours the oxen going down hill; but most have adopted the wooden axles, with iron arms, on which both wheels go round.

The slide-butt is merely a strong oblong box, holding about three or four common wheel-barrows of earth, or compost; it is shod as the sledge just described, and is convenient for drawing out the dressing to small distances from the large heaps deposited in the fields: one horse, or two oxen, are generally used: I observed some with wheels, and these are called gurry-butts. I will attempt to give a sketch of them.

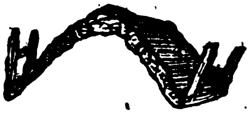




Another vehicle, called dung-pots, is in use here, for carrying dressing a short distance; they are slung over a horse, mule, or ass, having wooden pack-saddles upon their backs: the contents of the pots drop through a falling-door in the bottom, on each side the animal. These are indispensable conveyances on the hilly grounds.

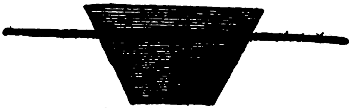


A hilly country, like Cornwall, excites exertion, and is productive of much ingenuity, in the contrivance of the carriage of different articles; hence the variety of modes of conveyance we meet with in this county. Long and short crooks, as they are termed, are used for the carrying of sheaf-corn, hay, faggot, billet-wood, slate, and flag-stones; a sketch of these, rude as it may be, will prevent a tedious wordy description.

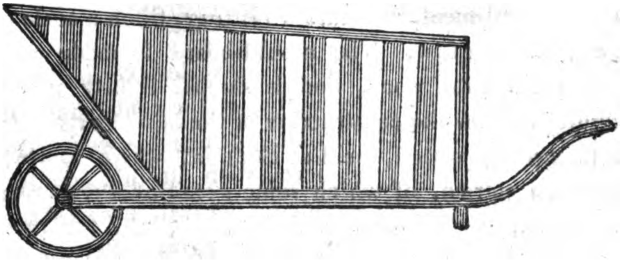


They are made of oak, or elm, and formed of crooked wood.

In some parts of the county they have large hand-barrows, in which they carry the corn out from the barn to the place where they mean to winnow it. They are also used for carrying fish, and are called gurries.



Grass-barrows are used on a few farms, where they adopt the economical, and highly-to-be-commended practice, of soiling cattle in the houses and yards; they are so constructed, as to hold a large quantity, the weight of which bears upon the wheel, or wheels, and requires only the exertion of pushing it forward; those with two wheels go the steadiest, but they are difficult to drive up hill. The annexed sketch is a side elevation of the barrow,



and the following are the frame and dimensions of the barrow.—*C. V. P.*

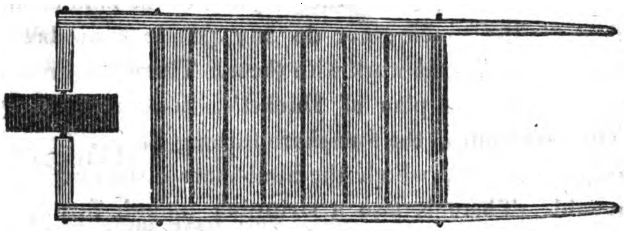


Fig. 5, *Plate* VII. is a contrivance for impeding the too rapid descent of carriages going down the steep hills; it is called a drag. *a a*, are two pieces of iron, of the shape at *Fig.* 8, and fitted to the wheel for which they are designed, firmly screwed on to a strong plate of iron, which is curved in the way shewn on the Plate, and the fore part of which rests on a small wheel: the whole is made of iron. The scale of the drawing is one inch to a foot. This was invented about twenty years since by a blacksmith in the west of Cornwall, who received a premium from the Society of Arts.

Ploughs.—Some few wheel, foot, and other county ploughs, have been introduced into Cornwall, and trials made with them; but the old Cornish plough still maintains its ground.

Mr. Dayman has favoured me with a figure of this simple implement, at *Plate* VII. *Fig.* 6, on a scale of an inch to a foot. The mould-board is made of a straight piece of wood, and is shaded lightly in the figure, to shew the construction of the other parts. At a ploughing match, held at Bodmin, where fourteen ploughs started, of which some were Suffolk, double-furrowed, Rotheram, French ploughs, &c. the three prizes were adjudged to three common Cornish ploughs. An old ley-field and a stiff loam was the scene of trial.

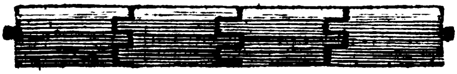
The turn-wrist ploughs are in common use throughout this county; indeed the hillyness of the land makes them indispensable; nor do any people know better how to make good work with them. There is a French plough, on the plan of Ducket's, in occasional use, with two shares, the fore-share turning half of the sod into the furrow, which the hind-share covers with the mould. There is also a stripping plough furnished with a share, see *Plate* VII. *Fig.* 7, with which the land is balked, or *turned to rot* provincially. This practice is described under "Tillage."

Harrows—are either single or double; they are of the old-fashioned form; and of all our implements, the most defective. Some few gentlemen have the improved harrows of other counties.

Rollers—are either wood or stone, perfect cylinders, without any concavities or convexities. The stone is granite.

The implement, called a *tormentor*, is in general use here, and similar to that of which a Plate is given in the Devonshire Report. Cook's cultivator is coming into use. The mattock, two bill and shovel, as delineated in that Report, are the same as those used in Cornwall.

Thrashing machines are become very general, few farms of consequence being now without them; they are mostly wrought by horses, a few by water, and I have heard of one by steam; but I believe it has not answered. The prices vary from 30*l.* to 100*l.* Those in common use cost from 40*l.* to 60*l.* Several have been constructed to work with chains, instead of cogs, and are found to answer. A great improvement has been made on the feeding rollers; the upper roller, instead of being one solid cylinder of wood, with rods of iron fixed to it, as formerly, is a decagon, or octagon, of cast-iron, and divided into four parts, which are loosely jointed into each other, so that, in turning round, each part can rise or fall separately, as the corn is spread thicker or thinner.



The advantage is, that by this contrivance the corn is regularly held; whereas, by the roller being all of one piece, if at one part the corn happens to be more in a heap than at another, the roller is raised, and great part of the corn passes through, without having been held sufficiently to the beaters, and is consequently imperfectly thrashed.

"A thrashing machine, to be wrought by hand, has been invented by a gentleman of this neighbourhood, of which a front and side view are given at *Plate* VII. *Figs*. 1 & 2; the scale is half an inch to a foot:—(*a*), a circular drum, twenty inches diameter, with beaters; (*b*), a cast-iron wheel, five feet two inches diameter, with 280 teeth; wrought by the handles, (*d d*); (*a*), a pinion, 4 $\frac{6}{8}$ inches, containing sixteen teeth, on the axis of which is fixed the drum. In this pinion the wheel (*b*) works; (*e*), the grating, which is set to any distance from the drum, by means of the screw, (*f*). The side of the machine is uncovered, to shew the construction of the grating. The cost of one of these is about 12*l*. It thrashes wheat remarkably well, and does very well for barley and oats, if carefully fed; but the feeding rollers being thrown aside, more attention is required to these latter grains. A man and woman, or man and boy, are the force required.

The working this machine, by hand, not being found to answer well in practice, the usual feeding rollers have been added, and a horse-tackle applied, at the additional expense of about 20*l*. and it is now found to do its work well, and easily, with one horse*.

The usual manner of thrashing corn, in the lower parts of Cornwall, deserves notice, as it seems peculiar to this part of the county, and has its advantages. A frame, which they call *barn boards*, is formed of four or five sycamore or ash plank, on three ledges, or transverse beams; this frame is about seven feet by four, and about ten inches in height. Care is taken that each plank is set about the third of an inch from its neighbour, that the grain may fall through. By this mode of thrashing, little or no corn is bruised, which, with the flail on the common floors, is so much the case, as to occasion a considerable waste, both of seed and bread-corn. The practice of beating out wheat on a barrel, or on an inclined plane, by women, prevails in some parts.

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* "Notwithstanding the extreme ease, and excellent effect, with which the machine thus altered was worked, it was found that the teeth of the iron wheel were too fine for the increased force applied; and a vertical wooden wheel and pinion have been substituted, thus adding to the strength, and preserving the simplicity, of the machinery."—*C. V. P.*

CHAP. VI.

ENCLOSING.

THOUGH there be no case, till very lately, of enclosure by Act of Parliament in the county; yet there are numerous instances of parcels of land being taken up from the waste, and enclosed with temporary dead fences, for the purpose of securing two or three crops of corn; after which the land is consigned to waste again. However, of late years, some farms have been considerably extended, by enclosing many acres of the wastes contiguous thereto, with good substantial stone, or turf fences, for permanent improvement. Charles Rashleigh, Esq. of Duporth, has, within these few years, enclosed and cultivated a considerable tract of waste land, near St. Austel, which has been done with great spirit and effect. E. J. Glynn, Esq. of Glynn, has also enclosed a large quantity of land for permanent cultivation. Lord Grenville has just obtained an Act of Parliament, for enclosing a very great extent of waste lands in the neighbourhood of Boconnoc.

SECT. I.—FENCES.

THE fences may be divided into three classes. First, Stone hedges*, which are principally in the *western part*, and upon the sea coast. Secondly,

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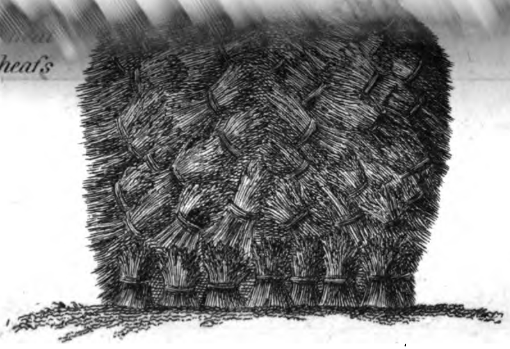
* All mounds, not regular masonry, are in Cornwall termed hedges.



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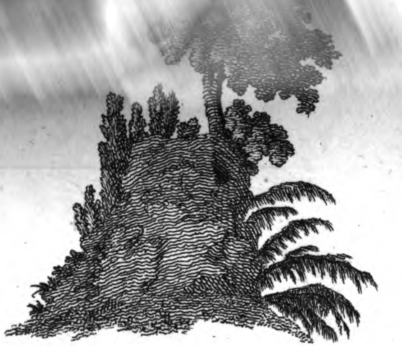

Earth hedges, capped with stone, brush-wood, &c. chiefly used on the moors, and country round Camelford, to the north. And thirdly, Hedges planted with thorns, hazel, and other brush-wood, or trees, and formed generally of earth alone, faced with sods, or stone. This is the common fence of the eastern part of the county, and is also used, though not universally, in every part.

First, Stone hedges are made of *coarse slate*, which is placed on its edge, with piers of flat work at every twenty or thirty feet, which piers are flush with the face of the hedge, (see *Plate* VIII. *Fig.* 1), being an elevation and section of this fence. If the stone can be raised in the field, (which is generally the case), the cost is from 10*s*. to 15*s*. per yard of eighteen feet by six feet in height; the base is from five to six feet in breadth; the height from five to seven feet. By an inspection of the Plate it will appear, that the principle on which these hedges are constructed is good; and, in fact, a hedge-wall of this description, about nine feet in height, may now be seen at Padstow, which, having been covered, (as in *Plate* VIII. at *Fig*. 2), has stood upwards of fifty years without repair. This sort of fence is well worth the attention of proprietors and farmers, residing in districts where slate, or any stone which will split into lamina, is plenty.

An elevation and section of the second class of fences is shewn at *Plate* VIII. *Figs*. 3 & 4, with different materials used in capping.

The third class, planted hedges, of which I have thought it right to give a sketch in *Plate* VIII. *Figs*. 5 & 6, because the mound of earth, in which the bushes and trees are planted, is raised much higher than in other counties.

I shall make a few observations on this latter mode of fencing, which I think at least equal to any other. It will perhaps be thought, that the formation of so high and wide a fence would take up too much room, and also require more of the vegetable surface, than can be properly spared for such a purpose; but by calculation it will be found, that on a large farm, the number of acres occupied for these fences, is comparatively small, and the ditches being so much deeper in consequence of the quantity of earth dug out of them, to fill up the middle of the hedge, may act in low and swampy grounds as so many open drains, and amply compensate for any supposed waste of soil, by keeping the land dry. They also carry a great deal of grass on their sides. If properly managed, they may be termed impregnable, to the attempts at least of cattle.

In situations favourable to the growth of wood, these hedges find the farm-house in fuel; no unimportant consideration where coals are scarce.

The shelter afforded by these high fences to cattle, and to the tender grasses, is very great, and all injury to the corn, from confined circulation of air, is prevented by the hedges adjoining the corn-fields being cut, plashed, and double dyked, "that is, all the wood from the middle of the hedge is first cut out, leaving a sufficient quantity on each edge for the purpose of plashing, which is done by cutting the plants about half through, fastening them down to the hedge, and casting on them the earth and subsoil found in the ditch, as attempted to be shewn in *Plate* VIII. *Fig*. 5. This is generally done, when the lands are sown to wheat. In fact, so many are the advantages to the occupier from these fences, that the objection of a waste of land is futile, and the landlord is well justified in taking the measurement of his fences with his fields, *i. e.* to the foot, and half way up the fence. The expense of building and planting is, from about 3*s.* to 4*s.* 6*d.* per yard, of 18 feet in length, by six feet in height.

While on the subject of fences, I wish to call the attention of farmers, whose farms lie on the north and western shores of this island, to a shrub of which probably none have made the proper use, few have taken notice, and with which many are unacquainted.

"The plant I allude to is the tamarisk; the botanical name is *tamarix Gallica**. It thrives rapidly when planted in situations most exposed to the stroke of the sea; forms an admirable shelter, and being of quick growth, soon comes to answer the end designed. I know a hedge of it, which, I am told, was planted about seven years ago, and the bushes (I judge by the eye) cannot now be less than from 10 to 12 feet in height, and are feathered to the very bottom. The tamarisk thrives well about the Lizard; it bears cutting perfectly well, and in exposed situations, where it might be injured if left to grow high, may be kept close and low to much advantage.

I therefore most earnestly recommend a trial of this shrub, to persons whose farms lie so much exposed to the breach of the Western Ocean, as to be unfit for the growth of plants. Tamarisk, however, will not stand the frost, and should never be attempted in situations exposed to the severe effects of it. It is propagated by cuttings, which take root without any difficulty.

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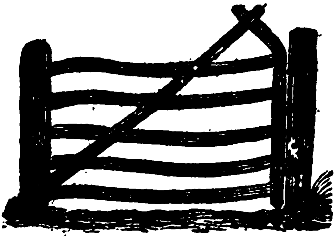
* There are strong reasons for believing that this shrub was brought by the Monks, from Normandy to St. Michael's Mount; when that Monastry depended on Mont S. Michel: and that it has spread from thence to the Lizard, and other places in the west of Cornwall.

For this account of the fences in Cornwall, so well described, and so correctly delineated, I feel myself under very particular obligations to Mr. John Dayman, of Padstow: indeed from the time and pains he has taken, in giving me written information upon every Chapter almost in the Report, I consider him as my coadjutor in the Survey.

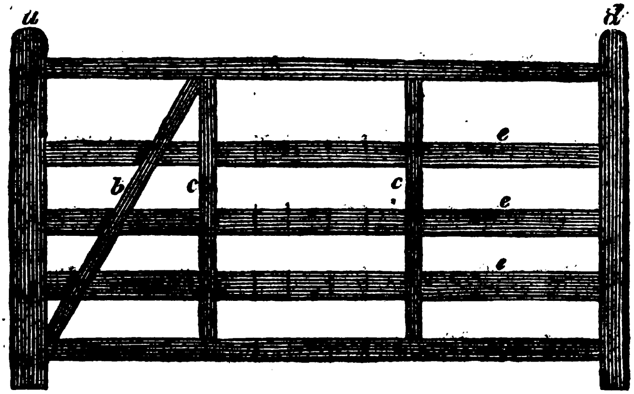
R. L. Gwatkin, Esq. of Killiow, a practical agriculturist, says, "I have lately adopted a plan, which I deem worthy of notice. For a turf-hedge to be six feet high, when completed, we allow six feet base; but as it settles a good deal, half its height only is built before Christmas; with the filling ridged up in the middle, to turn the wet. This remains to settle till March, when the remainder of the hedge is laid, and the proper plants or cuttings are set."

Gates.—In the western parts of the county, owing to the scarcity of timber, the gates are mostly of deal, generally slight, and they quickly decay, and get out of repair. Further inland, and wherever wood is tolerable plenty, they are made of oak, elm, ash, &c.; a representation of one of which is annexed.



A good strong oak gate with posts, iron-work, &c. complete, costs from 15*s*. to 18*s*.

A new plan of a gate, constructed on a principle of great strength and durability, is the following:

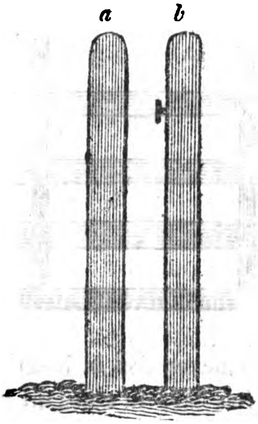


"I have a gate eleven feet in length, made on this principle, which has been in constant use nearly twelve years, without the smallest appearance of failure. The upright and supporting pieces, are oak; the bars, deal. The pieces *b*, *c*, *c*, are morticed *into*, but not *through* the top and bottom bars, which bars are of three-inch scantling. The hind post, *a*, four and a half inch, fore post, *d*, three and a half inch; *b*, *c*, *c*, three inches by two inches; the bars, *e*, *e*, *e*, four inches by three quarters of an inch. The supporting piece *b*, should make an angle of about 30° with the post, *a*, and be morticed partly into the top and bottom bars, and partly into the hind post, and upright piece, *c*.

"The bars *e*, *e*, *e*, pass through *b*, *c*, *c*, and mortice into, but not through *a*, *d*. When the parts of the gate are put together, good oil-paint should be laid in all the mortices, &c.

"At the present high price of timber, (March 19, 1810), a five-barred gate, seven feet and a half by four feet, with one coat of paint, costs 15*s*.

"Where swing-gates are improper, I have found it an excellent method to have two small, instead of one large post, for the gate to shut to.



"The post *a* stands about nine inches *beyond* the post *b*, or further from the gate, as it shuts to. It also stands a little within it, so that the narrowest part of the gateway is formed by it; the *catch*, for whatever sort of *latch*, is fixed on the post *b*, so that the latch, whether passing under or over the catch, the gate falls against the post *a*, and the latch will have regained its situation, before it rebounds against the back of the catch. By these means, the gate is not liable to be left open, and as its weight falls only against the post *a*, the catch on *b*, is not subject to be put out of order.

"As the post *a*, forms the narrowest part of the gateway, the post *b*, is not likely to be shook by an unskilful driver; but should a wheel strike against, and loosen the post *a*, the shutting of the gate is not affected."—*C. V. P.*

CHAP. VII.

ARABLE LAND.

SECT. I.—TILLAGE.

CORNWALL not being a dairy country, and the generality of the farmers having an idea, that there is nothing like corn in sacks, for making money, they are very fond of the plough; and consequently the tillage for white crops is large: perhaps it may be hazarded, that full one-third of the cultivated lands are under the plough.

Tillage is performed by one or other of the ploughs already noticed in the Chapter on Implements. If a lay is to be broken up, the stripping or paring share, *Fig.* 7, *Plate* II. is used. The method is to turn a thin slice of the turf, about the breadth of four or five inches, on a piece of solid turf of the like breadth; thus, though the turf is but half stripped, the whole is covered, and the field presents a rib-like appearance; hence termed ribbing in some places; in Cornwall, *turning to rot*, or combing*. If the land is intended for the immediate reception of seed, where the ground is moderately level, the common country plough is used; where hilly, the turn-wrist plough. The draught is occasionally performed by four or six oxen in yoke, commonly with two oxen and two horses, and sometimes by two horses alone, with a driver generally, though there are some instances, where the horses are driven by the ploughman, with whip-reins. With either of these draughts, they turn a furrow from four to six inches in depth, and six or eight in breadth, laying it more or less on its edge, according to the crop intended to be sown. The lands for wheat are generally laid in ridges from seven to nine feet in breadth; but for barley, oats, or turnips, if the ground is tolerably dry, it is laid level. Should water-furrows be necessary, they are cleaned out by the plough, and afterwards more effectually and neatly by the shovel. About three quarters of an acre per day, is the usual task for either oxen or horses. Harrowing is performed by oxen or horses. Rolling is practised, with the view of pressing the soil about the roots of the corn, keeping in the moisture, pulverizing the land, laying it smooth for the scythe; and is also done by oxen or horses.

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* See preparation for wheat, p. 57, 58.

Scarifying, scuffling, or tormenting, in some few instances, supersede the use of the plough, for a barley tilth, after a crop of turnips.

SECT. II.—FALLOWING.

THERE is hardly any branch of husbandry, in Cornwall, so incompletely performed as this: if there is any preparation of land, approaching to a naked or dead fallow, it is for wheat; but in this, the lay is not generally stripped, or turned to rot, until about Midsummer, or later; it lies in this state till harvest is over; it is then harrowed; the stroil, couch-grass, and weeds, burnt, and the ashes spread. Where an old lay is intended for turnips, it is treated the same as for wheat; but the operation of stripping does not commence till Christmas, or after; and in May or June the process of burning takes place.

SECT. III.—COURSE OF CROPS.

The general course of crops, in the county of Cornwall, is extremely reprehensible; there is no circumstance evinces the truth of this assertion more, than the wretched, exhausted, foul appearance of the grounds, laid down with grass-seeds; nor can it be otherwise, after having been cropped with corn, as long as they will bear any.

I might mention a few, nay, perhaps many instances, in opposition to this impoverishing system: and it is to be hoped that the superior richness, cleanness, and verdure of such lands, will soon convince the generality of farmers of their error, and promote a more vigorous and liberal system of husbandry. There is hardly any cleansing crop but potatoes and turnips; a clean, spirited culture of the latter is by no means general throughout the county. In some parts, they are not hoed at all, and in other parts very badly. The Eastern District, and some intelligent cultivators in the West, shew the vast utility of the diligent use of the hoe; not only in the growing crop, but that which succeeds it: the turnip culture is rapidly increasing here; the hoeing a turnip crop is undoubtedly an essential part of good husbandry, and the farmer who neglects it, may justly be called a sloven: but the great value of turnips, as a cleansing crop, consists in the time it gives for fallowing and cleansing the land, previous to its being sown. Land intended for turnips should be clean ploughed early in the spring, and harrowed down fine in April, to encourage the growth of weeds, which, by a ploughing in May, can with certainty be destroyed. May is the only month in which land can with any certainty be cleansed, in our wet climate.

Potatoes are hoed, but the culture is not sufficiently extensive to be named among the hoeing crops. It may perhaps be alledged by some, that the inconstancy of the weather, and the great humidity of the climate of Cornwall, precludes the possibility of adopting, generally, those excellent meliorating intervening crops, beans and pease; and by others, that they are crops not adapted to the demand of the country; yet beans and pease are grown in similar climates and soils, and large quantities of both are annually imported, the former for horses, the latter for culinary purposes; though I must here remark, that pease are not so frequent a dish, on the tables of either the rich or the poor, as they are in other counties.

The following rotation of crops prevails in Cornwall;

No. 1, Wheat, barley, or oats with grass-seeds.

No. 2, Turnips, barley, wheat, barley, or oats with grass-seeds.

No. 3, Wheat, turnips, barley, or oats with grass-seeds.

No. 4, Potatoes, wheat or barley, if the latter, with seeds.

No. 5, Wheat, barley with grass-seeds.

The two first of these orders of crops will account for the poverty and wretchedness of many of the lay lands throughout the county. The second course of crops was introduced in the year 1801, when the high price of corn induced many farmers to adopt it. It is, however, much to be lamented, that a practice so ruinous, and which was introduced from an accidental circumstance, should still in some degree be continued.

SECT. IV.—CROPS COMMONLY CULTIVATED.

The corn crops cultivated in this county are wheat, barley, and oats; the avena nuda of Ray, in Cornwall called pilez, is also sown in small patches in the Western District; it bears the price of wheat, and is used for fattening pigs, or for rearing calves.

The green and root crops, commonly cultivated by the farmers in Cornwall, consist of red and yellow clovers, trefoil, and rye-grass (called eaver in Cornwall), turnips, ruta-baga, potatoes, and in some instances the flat-pole, or drum-head cabbage.

WHEAT.

First Preparation.—The process of preparing the land for this grain, varies in different parts of the county; however, one very essential object, and general practice, seems to be the collection of a large portion of earth: if it cannot be procured from any other part of the farm, a breadth of land about five or six feet, is ploughed up round the hedges of the field intended for the crop: this ought to be done before Christmas; and during the spring and summer, the earth is carted into heaps, 15 or 20 cart-loads in each, and three or four such heaps on each acre; to which is added, either lime, sand, dung, or scrapings of roads, according to the spirit or ability of the cultivator.

If lime is the manure used, as soon as it is partially fallen into powder, it is spread over the heap of earth prepared for its reception, and both together being well turned, and mixed, are shovelled up into a ridge or cone-like form, and beat close with the back of the shovel, in order to keep out the wet; in this state it remains until used; when it is carried, and spread (provincially, scoded) over the field; some few farmers spread this dressing upon the lays, before they strip or turn them to rot, which is thought an improvement. The seed-furrow is then given, and the wheat immediately sown, and harrowed lengthways of the ridges. If sand and dung be the manures, the process of mixing with the earth-ridge, and casting them up, is the same. Should the hedge-rows be destitute of this earth, and none to be had any where else, many farmers plough up, in the field intended for wheat, three or four furrows of about seven or eight inches in breadth, and at a distance from twenty to thirty yards from each other; this is done as early in the spring as leisure and weather will admit. These furrows are then chopped fine, and by barrows wheeled into heaps, making four or five to the acre: if lime be the manure, the management is the same as just described; and if dung, sand, and scrapings of the roads be used, great attention is paid to the pulverizing and incorporating them well together; these heaps are wheeled out, and spread before the seed furrow is ploughed. If an early crop of turnips has been the preparation, the turnips are eaten off early in autumn by all kinds of stock, and after one ploughing, the seed is sown and harrowed in.

I have met with only a few solitary instances of this excellent practice, which may be termed a kind of green fallow. When wheat succeeds a potatoe crop, the ground is harrowed to level it, and to collect the haulm or stalks; the seed is either ploughed in, under a shallow furrow, or tormented in; and some give one ploughing, and harrow it in; but it is only a very small breadth of potatoe ground that is sown with wheat, taking the county throughout.

Wheat too frequently succeeds a crop of barley; in this case, the barley stubble sometimes receives a manuring of earth and lime, or compost, which have been collected and mixed during the summer round the hedges of the barley field; this is carried out and spread upon the stubble, and after one ploughing, the wheat is sown and harrowed in. I have seen no instance of wheat sown on a tare or clover stubble in this county; but Mr. Gwatkin informs me, he has sown wheat with success upon a tare stubble.

Time of Sowing.—There are certainly numerous instances in this county, more particularly in the western parts of it, to prove that the common sort of wheat-seed may be sown in the spring months, and with such success, as to induce some farmers to do so by choice; but I believe much is also sown in that season by *afternoon* farmers. The prime season for putting in wheat, by all good farmers in this county, is from Michaelmas till the middle of November. They have an old saying, that wheat plants should be high enough to cover a hare's back by Penhale-fair, the 25th of September.

> "By Penhale-fair,
> "Wheat should cover a hare."

This early tillage is now seldom or never attempted.

Seed.—This varies from 16 to 24 gallons to the Cornish acre, according to the earliness of the season, and the quality of the soil.

Steeping.—Stale urine, salt, or fresh water mixed with quick-lime, is generally used; but by no means to the total prevention of that distemper called smut (provincially, colly-brand), or burnt, in other counties.

It may be assumed as a fact, that this disease (colly-brand), has lessened within these three or four years last past, and certainly owing to the various attempts at cleaning the seed, for which a brisk washing with pure water is perhaps as effectual as any.

Sort.—White upon the dry warm rich loams, and the red upon the thin cold moory soils. Various other sorts of wheat have been introduced and tried in this county, and some of them keep their station, particularly the buff wheat, on rich and deep lands, which being stiff in the straw, is less apt to lodge than the common sorts: the Hertfordshire wheat is also sometimes tilled.

Manner of Sowing.—It is almost universally sown by the broad-cast method.

Water-Furrowing.—This operation is much attended to, and well executed by the plough, but very frequently with the shovel, and I think much neater and more effectually. An old well-worn shovel does this work best; the furrow-edge should be kept pretty stiff.

Of late years water-furrowing is not quite so general, and many acres of wheat are sown without any furrows at all.

Culture while growing.

Hoeing.—No instance of this operation has occurred to me; but that of weeding in the spring with the weeding-paddle or iron, is never neglected, and is done by women*. About the month of March the wheat is rolled with a stone roller; and if it is thick or rank, some farmers feed it with sheep.

Reaping and Harvest.—It is reaped by small hooks or sickles. Women and men, even girls and boys, make up the busy group: this may be said to be the most general method of the county. The scythe is seldom used, and only when there is a want of reapers. As the wheat is cut, it is immediately bound into sheaves; and in the eastern part of the county, put into shocks of eight or ten sheaves each, with a cap formed of a single sheaf, with the ears turned downwards; and if the weather permit, carried in a few days.

In the western part of the county it is formed into arish or errish mows, a section of one of which is given at *Fig.* 8, *Plate* VIII. where it remains for a fortnight to three weeks. These arish mows are admirable things in a catching harvest; if proper care be taken in forming them, to keep the middle well up, so as that the butt-ends of the sheaves may have a considerable slope outwards, the corn will receive no damage, though it were to remain in the field a month or six weeks.

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* "I hoed twelve acres of wheat in the months of March and April, 1800; it was very much infected with charlock, which the operation completely subdued: the crop was great, sixteen Cornish bushels per acre. I repeated the experiment the following year on alternate ridges, but could discover no benefit from the hoe; the crop however in this field was very good. It may be remarked, that the soils were totally different."—*R. L. Gwatkin.*

The method of making the arish mow is thus described by Marshall, in his Western Tour. A sort of cone or pyramid being formed with sheaves set upon their butts, and leaning towards their centre, the workman gets upon them on his knees, an assistant putting sheaves in their proper places before him, while he crawls round the mow, treading them in this manner with his knees, applied about the binding place; and continuing thus to lay course after course, until the mow be deemed high enough; observing to contract the dimensions as it rises in height, and to set the sheaves more and more upright, until they form at the top a sharp point, which is capped with an inverted sheaf, either of corn or reed. Where corn is put up in these stacks it is considered safe.

The corn when carried, is all stacked on oblong frames of wood, fixed on stone posts, about two or two feet and a half in height, with stone caps to prevent the vermin from getting in; and on this frame are laid deal boards or loose poles, with a thin layer of furze, so that the air has a free access to all parts of the mow.

It is neatly thatched, and the thatch secured with straw-ropes; and in many places the mows are pared round, to prevent the vermin, which might leap against them, from finding any holdfast.

Produce.—From 18 to 20, and 22 Winchester bushels. In strong lands, from 30 to 40. In the best corn districts, from 30 to 45.

Weight.—60 to 67lb. per Winchester bushel.

Spring-Wheat Seed from London.

Mr. Grosset sowed this wheat on a pea stubble on the 30th April, and cut the produce one week only after the autumn sown, without the least appearance of rust: it was one acre of ground. Quantity sown, 3 bushels* ; the produce 32 bushels, and weighed 63lb. per Winchester. His second experiment with this wheat, was in a field of four acres ; one half sown with winter wheat in October; the other half, spring wheat, the last week in April: the autumn wheat was very much rusted, the spring wheat not in the least.

"No instance has occurred of its being rusted in six experiments with it; but Mr. Glanville says, that his spring wheat was rusted this year (1809)."—*R. W.*

The practice of sowing spring wheat is become more general; the time of sowing, the middle or latter end of April.

BARLEY.

There are many thousand acres of land annually sown with barley in this county. The greater part, I believe, follows wheat, much after turnips carried off, some after potatoes, and little upon lays.

Preparation.—The wheat stubble about Christmas is turned to rot, or thwarted, which is done with the plough, more or less diagonally across the ridges, the water-furrow being first gathered or ploughed in ; this lays the field dry, and somewhat rots the stubble. Early in the spring these ribs or ridglets are harrowed down, and suffered to lie; they are then tormented, or scarified, the stroil, root and weeds collected and burnt, the ashes spread, and the field ploughed, and after being just broken with the harrows, sown, by some farmers; but many, who aim at a more perfect tilth, give it another tormenting, roll and harrow until they have made the ground perfectly fine, when they sow the seed broad-cast and bury it about two or three inches with the tormentor, finishing with the harrow and roller.

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* Winchester measure.

Time of Sowing.—The last week in March, and the last in April, generally include the barley season ; but a late turnip crop, or a desire to clean a foul wheat-stubble, sometimes protracts the time to the first or second week in May. It is the opinion of farmers, when barley is sown so late, that it does not kern or corn well. When barley succeeds a turnip crop, it is put in by some farmers after one ploughing; but the general practice is to torment or scarify the ground once or twice, the harrow and roller following; the seed furrow is then ploughed, and the seed sown ; the harrow and roller finish. Potatoe ground is managed in the same way. If a lay field is intended for this crop, which frequently happens, it is stripped or turned to rot in the preceding winter, harrowed down in the spring, and, the weather permitting, burnt; it receives a manuring of compost, of lime and earth, of sand, dung, and road-scrapings: one or two ploughings, with the other operations for tempering and pulverizing the ground, bring it to the desired tilth.

Sort, and Quantity of Seed, Steep, Culture while growing.—The white Norfolk is generally sown, and the quantity from 24 to 36 gallons per acre. Bear or big is sometimes sown in low wet grounds. The thistles or large weeds are cut with the paddle.

Produce.—From thirty to sixty, and even to ninety bushels per acre; but the average may fluctuate between 30 and 40 Winchesters; weight per Winchester 50 to 52lb.

Harvest—Commences usually in August; it is cut with the scythe, and if clovered or weedy, they let it lie four or five days in the swath, then turn it carefully over; always bind it into sheaves, and put in arish mows: the stubble is raked with large wooden arish-rakes.

Thrashing.—Much is thrashed with the flail, but the thrashing-machines, as already stated, are becoming very general.

Bread.—Barley-bread was formerly eaten in almost every farm-house, but is now confined to small farmers and labourers.

OATS.

Preparation.—Oats in this county usually follow a crop of wheat or barley, and are put in with one ploughing, always broad-cast and harrowed, then rolled after the crop is up.

Time.—Oats are generally sown earlier than barley; the latter end of February, and early in March.

Sort.—Mostly black, but much white are sown in the northern and western parts of the county; but the growth of oats prevails chiefly on the coarse grounds, which are not so well calculated for barley.

The potatoe-oat has been lately introduced into this county. It appears heavier, at least two or three pounds per Winchester, than good oats of the common sorts.

Quantity of Seed.—"Sow them out of a cart with a shovel," said an old farmer to me. From six to nine Winchester bushels is the usual allowance per acre.

Produce.—From 40 to 60 Winchester bushels.

Weight.—34 to 38lb. per Winchester.

THE AVENA NUDA,

Provincially called Pilez, or Pillas.

The culture of this grain is confined to the western parts of Cornwall, and it is generally the farewell crop to a piece of ground that has been completely exhausted of vegetable food by preceding crops of potatoes, wheat, and oats. This plant grows something like the oat, but the straw is much finer, almost as good as hay; the grain is small, about the size of a shelled oat, and weighs as heavy as wheat per bushel; it is excellent for feeding poultry and pigs. One gallon of pilez mixed with 20 gallons of potatoes, makes a rich fattening mess for pigs. The pilez should be ground, and well mixed with potatoes; though I observed at some of the little hovels in the pilez district, that they strew the whole grain over the top of the potatoes, the steam from which causes it to swell much, it is then mixed with the potatoes, and the pigs eat it with avidity.

In many of the eastern, southern, and north-east parts of Cornwall, they scarcely know there is such a grain in the county: this circumstance points out the utility of a more general diffusion of agricultural knowledge, which the County Reports are well calculated to promote. This grain has been chiefly grown in black, moory, moist soils; the tillage, culture, and harvest, the same as for oats.

TURNIPS.

Preparation.—The commencement of the grand preparation of the land for this crop, is announced early in June, by the whole district being enveloped in smoke, exhibiting at once the very general establishment of the turnip culture throughout the county, and the almost universal assent as to the utility of the practice of paring and burning for them: many farmers would despair of success in the attempt to get a crop, without their beat ashes, nor do they think the benefit is confined to the turnip crop only, but shrewdly anticipate its good effects in one or two succeeding crops of corn. The ground, which is generally a lay from four to seven years or more old, having been stripped or velled, is dragged, harrowed, and rolled, then briskly harrowed a second time with two horses, which operation (provincially *running tabs*) is executed with a rapidity that would astonish the farmers in those counties where they use three or four heavy fat snail-paced horses. Here, a boy mounts one of the two light horses used, for the purpose, and keeps them at a smart trot until the earth is entirely shaken from the roots, and the weeds are made light and fit for burning; and now all hands, men, women, boys and girls, with short-headed rakes, having long wooden teeth set about three inches asunder, begin at the leeward side of the field, and rake the light well-harrowed tabs into small heaps; a wad of straw, or a bit of furze, is put into each heap on the windward side, and just before they go to dinner, they set fire to all the heaps got together in the morning. In the afternoon the business of raking, priming, and firing, goes on until a late hour in the evening, for it is a kind of harvest work, bustle bustle, for a month or six weeks.

They are very careful that this process of incineration shall be carried on by a smothered heat, so that the roots appear rather charred, than consumed by flame. When the ashes are cold, they are spread evenly over the surface, and in addition to this desirable application, in the Eastern Districts, about forty or sixty Winchester bushels of air-slacked lime are also spread: some curious farmers mix the lime with the ashes, and spread both together; but most farmers prefer a good compost of dung or road-scrapings, mixed up with lime or sea-sand. And now, the management of the dressed surface differs with different farmers, some giving a slight ploughing and harrowing before they sow, others depending on the tormentor and harrow alone, to bring the ground to the desired tilth for the seed-bed; all agree in the necessity of friability and complete pulverization.

When a wheaten arish is intended for a crop of turnips, it is thwarted about Christmas as for barley, or receives a clean ploughing to the full depth at once; and in the spring it is tormented, harrowed, and rolled, the weeds and stroil raked up, and either burnt, or carried to a heap to rot; a good rich compost is then spread and ploughed, or tormented in, and the seed sown.

Time of Sowing.—In succession from Midsummer until the end of July.

Sort, Steep, Seed.—The white Norfolk, tankard, whitestone, the purple and green round, and the yellow, or Hanover; are all sown in this county, the whitestone and the yellow as a late spring feed. Some farmers sow the common turnip among their growing wheat in May, which affords pretty picking for sheep in the autumn; but this is done chiefly on the newly broken wastes. A steep of train-oil and sulphur has been used, bnt with little effect: most farmers depend upon a richly manured fresh broken land, to hasten the plant into its rough leaf, as the best preventive of the fly; and they think the ashes contribute greatly to securing a good plant. The quantity of seed, from one to two pints.

Mode of Sowing.—The broad-cast is the general method; but here follows an admirable method of the row-culture of this plant, which I think bids fair to become a general practice in Cornwall, and is well worth the attention of other counties. I have been highly gratified with all the crops of turnips, both common and Swedish, which I have walked over, that have been managed in this manner; they were clean and abundant. It was first practised in this county by R. L. Gwatkin, Esq.

After a fresh ploughing, harrowing, and rolling, the manure is spread, the seed sown broad-cast, and covered by a small double mould-board plough, followed by a very light wooden roller, six feet six inches long, stretching over four ridges. In a fortnight or three weeks, a Berkshire shim hoes the furrows, and when the plants are of a proper size, women hoe the rest at six shillings the first time, and three shillings the second, for a Cornish acre. The advantages of this mode of sowing, are an extra quantity of earth and manure where the crop grows, and by the seed being deposited at different depths, a constant succession of plants has always ensured a full crop since the year 1792, when this experiment was first made by this zealous agriculturist.

August, 1808.—I have just viewed fifteen acres of turnips, drilled in the Northumberland method, by Mr. A. Thomson, on Glynn farm, belonging to E. I. Glynn, Esq.; the crop is clean and very promising.

Hoeing.—This operation is well executed in many parts of Cornwall; and from the premiums offered annually by the Agricultural Society, for the best hoers, I make no doubt, this useful branch of husbandry will soon be extended over the whole county. Where the practice is established, it is generally done by women and old men; good farmers give them two hoeings, leaving the turnips about nine inches asunder.

The accounts of the introduction of this excellent practice into Cornwall, vary. It is of little consequence when, or by whom, it was first adopted, but a more general and perfect use of the hoe in the turnip husbandry over the county, is of the most essential consequence, as is evinced by the very superior state of cultivation of the lands about Menhenniot and St. Germans, where it has been longest in practice.

Consumption.—The generality of farmers throughout the county draw them for fatting oxen in the house, and on lay-fields, for feeding sheep; their milch-cows, and breeding ewes get a small portion sometimes. They have been boiled and mixed with potatoes, for pigs; a practice which has been found to answer.

SWEDISH TURNIP.

The culture of this plant for spring food is pretty general, and is the same as for the common turnip, only a larger proportion of dung is found to be absolutely necessary to ensure a crop. This demand proves them to be more exhausting than the common turnip; indeed, it is the general opinion here that they are so. This may arise from their being sown earlier, and drawn later, than the common turnip. The fly is an inveterate foe to the seed-leaves of this turnip, and should the plants of the first and second sowings be eaten off, it might be too late to re-sow with a prospect of success. Under such a disaster, a bed of seedlings would be very desirable; but frequently the fly destroys the plants, even in highly manured seed-beds. This was precisely my own case, and with a view of remedying the evil, I spread, though late in June, a quantity of straw and furze all over the bed, and burnt it thereon; as soon as it was a little cooled, I sowed and raked in the seed; the plants came up strong and quickly, and such was the growth of them, that by the end of July they were fit to be transplanted, and I secured a very tolerable crop.

POTATOES.

The blessing of the poor rest with the manes of that benefactor, who first introduced this essential article of food; whoever he was, he supplied a cheap, wholesome, and nutritious subsistence for mankind, in times of a general scarcity of corn; for in the various culinary preparations of this root, we have the loaf, the pudding, and the pie; they are at all times a standing dish at the humble board of the labourer, and always coveted at the table of the more opulent; equally good for man and beast, easily cultivated and preserved, certain and prolific in their produce, and as a fallow, excellent for wheat or barley. The soil and climate of Cornwall are peculiarly adapted to the growth of the potatoe, the former being mostly dry, light, friable, and porous, and the latter moist and mild.

Preparation.—An old lay is preferred by some, and a wheaten or barley arish by other farmers; whichever it may be, it is well reduced by the plough, tormentor, harrow, and roller, until it is brought to a fine tilth; it is then amply manured with the best dung the farm will afford. Some farmers spread the manure evenly over the surface, and then opening a furrow with the plough, about five or six inches deep, put in the sets, at six, eight, or twelve inches asunder; then turning two or three furrow-slices, plant again, which places the rows from two to two feet and an half apart. Others plant seven successive furrows, then miss two; which two furrows are hacked, well broken, and spread over the ridge, when the potatoes appear above ground. Another mode is to plough a furrow, then plant, and with rakes draw the dung upon the sets, from as far as they mean to plant the next row. I find that some of the farmers put the dung upon the sets, and others under them, thinking it immaterial in what manner it is applied. Orchards and moory grounds are very often chosen for the cultivation of potatoes, which are here planted in the lazy-bed method.

Sorts.—Two red potatoes have been long established in this county; the one called the *painted lady*, the other the *painted lord;* a varied red and white smooth skin distinguishes the former, as a red and rough skin generally denotes the latter; but these potatoes are found to interchange their names, and even others to usurp their titles, in different parts of the county: the lady takes precedence at the table, coming earlier to maturity than the lord. The old red rough, an admirable potatoe, formerly common in the growan soils, is hardly now to be met with. An apple potatoe, which is also red, a white kidney-shaped, the golden dun, or London kidney, form table varieties; the farmer's delight, or ox-noble, and the champion, are cultivated for cattle.

Planting and Sets.—Generally in rows, and they cut the sets lengthways, with two or three eyes or germs to each.

Culture while growing.—Being considered as a cleaning, meliorating crop, most cultivators pay attention to weeding, hand or horse-hoeing, and earthing them up.

Taking up.—The plough, the spade, and the bidax, are used in this operation by different farmers; the plough is preferred for dispatch, the harrow follows, and then pigs glean the rest; the mode by spade and bidax, or mattock, would starve a pig. On poor lands they are sometimes wholly consumed by pigs, which are turned on them unringed for that purpose.

Mr. Marshall, in his Review of the Reports from the Northern Department of England, observes, that there is much good sense contained in the following note of the Surveyor of Lancashire: "The Surveyor has made some experiments to ascertain the best mode of cutting the sets; for, if the potatoe be set whole, putrefaction does not always ensue; and a set of a large size, to a certain degree, is better than a small one. The best method he has yet discovered, is taking off the sprout or nose-end, and the umbilicial or tail-end of the potatoe, leaving the middle entirely for the set. The worst method of cutting the potatoe, as has been proved, is cutting the potatoe down the middle, from nose to tail-a practice but too common." This is, indeed, a most important fact to the kingdom at large, if it has been really proved. But in this county, where many thousand bushels of potatoes are annually grown, the general practice is to cut the potatoes lengthways.

"A gardener of Penzance has informed me, that he can ascertain when a potatoe chosen for a set, will produce the curl; he observes, that a healthy potatoe will always be largest and rounded at its nose-end, but that a diseased potatoe runs smaller at its nose-end than at the tail-end, and will produce the curl, if planted.

The form of the diseased potatoe, which he describes, is very easily distinguishable in the kidney, or in any long-shaped potatoe; not so easily in the round kind; yet it is to be distinguished by attention, and by a little practice, in all."—*R. W.*

Preservation.—Some farmers preserve them in an out-house, throwing a covering of straw over them; others make them up into ridge-like heaps, taking the usual precautions for keeping them dry, by thatching, and cutting a trench round the heap; a method too well known to need description.

Produce.—From 200 to 600 Winchester bushels per acre.

Application.—If Cornwall does not grow wheat enough for its inhabitants, it certainly has the merit of supplying other counties with large quantities of potatoes; this year (1808) some ship-loads have been sent to London; the two great sea-ports, Plymouth and Portsmouth, are furnished with many thousand bushels annually from hence. After a reservation for seed and table uses, the overplus is applied to the feeding of pigs chiefly, but not to the entire exclusion of cows and oxen, to help out turnips in early spring. Most of the labouring people throughout the county keep a pig or two, and by this root alone, feed and fatten them, making delicious pork. The farmer's bacon-hogs are blown up by them, as they term it, and then finished with five or six Winchesters of barley, with a view of hardening the fat.

"For the last 21 years I have cultivated from one to three customary acres of potatoes annually. During that time I have raised many varieties from seed, some of which I continued to plant for several years, but after a fair trial have reduced my sorts to three. The *golden dun*, *London kidney*, or coppernose, as it comes early, and is on the whole more esteemed for the table than any other. Its character consists in being long, somewhat flat, with its growing eyes thickly placed at one end, which is of a light purple hue, while the rest of the potatoe is white. As the growth is all at one end, in preparing the sets, we cut off that end for setting, and give the others to the hogs.

" This potatoe ripens quicker than any other, and perhaps its superior quality is owing to this circumstance, as the vegetation of the plant is at an end before the morning frosts or blighting winds of autumn can check it. This sort has a good deal of blossom, but does not bear a great proportion of berries. From its seed I have always procured a greater variety of sorts than from any other, but none that appeared to be an improvement. It is less productive than any other sort; not more than half as productive as the *farmer's delight*, or large cattle potatoe, and a third less than the *apple potatoe*. Planted early in March, they are ripe by the end of June. In the western parts of this county, and in a growan soil, I have planted them in November, and kept them covered deep all the winter. Towards the end of March I raked some of the earth off them, till only a little more than the usual depth remained. I have by these means had new potatoes at my table by the end of April*. They will not admit of much banking; but as the potatoes grow very near the surface, after hard rains they are apt to be exposed to the sun, and the attack of birds, &c.; some earth, therefore, should be thrown over them before the stems and leaves decay. From being so short a time in the ground, not very productive, and bearing few berries, they do not exhaust the soil, but they fail as a cleansing crop.

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* It must be remarked, that the climate at that part of Cornwall at the bottom of the Mount's Bay, is particularly mild.

" *Farmer's delight*, or ox-noble, in general yield the heaviest crop of any sort I have ever tried. My land is certainly not very favourable to potatoes, yet with a manure of thirty cart-loads to the acre from the farm-yard, my produce, the two last years, exceeded 600 Winchester bushels per customary acre. These potatoes are white, long, and not so flat as the kidneys, and have the growing eyes nearly equally distributed. They should never be banked, or their naturally luxuriant growth may be increased till you materially injure the produce. If the weather is favourable to vegetation when the plant first appears, it soon covers the ground, and gets the better of all weeds. I never saw any crop equal to them as a cleanser. Planted in March, they are fully come by the beginning of August; and like the kidneys, their stems quickly decay. They have a few small blossoms, but never a berry, in the 20 years I have cultivated them. I hold them therefore to be less liable to adulteration in the sort, than any other; and from every part of their character, as well as produce, the best of all for the principal crop: they are not a bad potatoe for the table.

" *Apple potatoes* do not yield so large a crop as the last mentioned, but have the advantage in point of goodness for the table, and keeping through the winter and spring. This is a red potatoe; should be nearly round, with the growing eyes equally disposed. A Cornish bushel of moderate sized apple-potatoes, should weigh 220lb. which is considerably heavier than any other sort. It bears large clusters of blossoms and berries, and it is on this account probably, that it exhausts the ground more than any other. The fibres of the stalk also are more rigid and tough, than of the other sorts, though the stem and leaves are not so luxuriant, nor do they afford so complete a shade to the ground, as the ox-noble. From the seed of this sort I never could produce any variety. Those I now cultivate, come from seed which I sowed about fifteen years since.

" These potatoes increase by banking more than any other, but I have discontinued that practice, even with them, for the following reasons: while you keep banking, the root continues to throw out fresh fibres, and to form vast numbers of small potatoes, while those first formed do not ripen, and the plant is encouraged to continue its growth till frosty mornings and blighting winds put an end to its vegetation, before the potatoes have attained perfection.

" I had for many years continued, as my general culture of potatoes, to put the sets in after the plough for two contiguous furrows, and then plough two furrows without sets, and so on, through my field. In those intervals I used the horse-hoe and banking-plough alternately, and certainly had great crops, but always an abundance of very small potatoes as well as of unripe large ones. I found that the *London kidneys* must be near the surface to attain perfection, therefore I early left off banking them. The *farmer's delight* throw out many fibres to a great length, and the potatoes grow at a great distance from the plant. I found in consequence, that with the horse-hoe and plough we cut a great many of their fibres, and injured the crop. I have above assigned the reason for not banking the apple potatoes.

"My general culture at present, is to put sets in six following furrows, and then leave two furrows unplanted; when the potatoes appear, we give them a heavy harrowing; while young the women hoe the weeds from the intervals, and soon after we give a little top-dressing from the intervals, and it is seldom that any thing more is requisite, unless some of the larger sorts of weeds may now and then appear, and these are easily removed. I have by this method had crops of even-sized potatoes of as much measure per acre, and I should think a considerably greater weight, than by the former method, but *that* I have not ascertained. I think that *apple potatoes* require as much more manure than the other sorts, as the Swedish turnips do than the white. I have found the sediment of parts of the Fowey river a good manure for potatoes; it is a deposit of leaves, sand, and river-mud, and called *ligan*.

"After having used the plough many years to take up my crop, I have returned to the shovel, and believe it to be the best economy, as it requires many ploughings and harrowings to get all your potatoes; and the shovel works the whole of the ground so completely, as amply to pay for the labour in the following crops. With the shovel, it is certain that more potatoes are cut and injured, but when you use them for hogs, that is of no consequence; if they are all to be brought to market, it would be worth while to pay for greater care in taking them up.

"I fatten several hogs every year, and I have not given a *grain of barley* or *meal* of any kind, for these 17 years; boiled potatoes in the winter, and milk in the summer. At the market, my pork has been often admired for its quality; and for bacon, hams, cheeks, &c. &c., it has answered fully as well as the best corn-fed pork. We boil our potatoes in a furnace; as soon as the water begins to boil, the fire is taken out, and the potatoes sodden, and left to grow cool before they are used. This had been my practice for many years, and I estimated the value of potatoes in feeding hogs at 1*s*. 4*d*. per Winchester bushel, but the expense of fuel and labour formed a considerable drawback. For the last two years I have pursued the following method, first suggested by the Rev. R. Walker.

"The potatoes having been washed, are made into a muck by the apple-mill. Two women will grind three Winchester bushels per hour. In using the muck, about two quarts of hot wash or milk are thrown into every three or four gallons, to take off the chill; when put up to fatten, a pig of six or seven score weight, will eat from two to three gallons per day of this food; and without the advantage of milk or any other mixture, potatoes used in this way yield a profit of nearly two shillings per Winchester bushel. It is necessary to remark, that the hogs which have been fattened in this way, are of the superior breed of C. Gordon Grey, Esq. Somersetshire. I mention this circumstance, as farmers in general are not aware of the advantages to be gained by attention in procuring such breed of animals as fatten upon the smallest quantity of food.

"I have invariably found, that after the month of February, or when the potatoes begin to throw out their growing fibres, the pigs do not eat them so heartily, nor do they thrive so fast upon their food. It is therefore advisable to feed as much as possible in the late autumn and winter months.

"I have tried potatoes as food for working horses, but did not find them answer. In feeding cattle upon turnips, I find it a good practice to give potatoes when at a low price, a day or two, every week, as a change. For milch-cows, I have found potatoes increase the quantity of milk, but the cream and butter are of bad quality, and small in quantity; the butter very white, and *crumbly*, if I may be allowed the expression.

"After having made many enquiries, I cannot form any exact conclusion with respect to the quantity of barley annually given to feeding hogs.

"In many farms, a determination to have as large, and as fat hogs as possible, seems to prevail; without regard to the quantity of food consumed in attaining this end. In consequence, we often hear of a hog weighing upwards of *thirty score pounds*, and which has consumed more than *ninety Winchester bushels of barley*; and this, since barley has been from 5*s*. to 6*s*. per Winchester. Here then two customary acres of barley of a good crop (45 Winchesters per acre) is consumed in the fatting of one hog.

"But this, though a frequent, is by no means a general practice. The most common weight of hogs killed upon our farms, appears to be from 16 to 20 score pounds. A farmer's hog, particularly where the flail continues in use, is generally in good condition, and when put to feed, has potatoes, either raw or boiled, administered without measure, as long as they seem to do good, and to be eaten heartily. After this, barley is given, in some cases whole, but oftener ground; and either mixed up with water, or kneaded into loaves, which latter appears to be most beneficial. The quantity thus given, by the result of considerable enquiry, I have found to be nearly 12 gallons of barley to every 20 lb. weight of pork. I believe I give a fair value to barley, if I state the average crop at 36 Winchesters per customary acre.

"In our growan soils in the West, it does not require great manure or superior culture to produce from 4 to 500 Winchesters of potatoes per customary acre. By proper care I have often raised considerably more than 600 Winchesters; I am therefore certain that I do not over-rate an acre of potatoes, by taking it at 300 Winchesters per acre. At these rates, an acre of barley, at 5*s*. per Winchester, is worth 9*l*.; an acre of potatoes, at 2*s*. per Winchester, is worth 30*l*.; at 12 gallons of barley to 20 lb. of pork, gives 480 lb. of pork for 9*l*. I have never used so much as three Winchesters of potatoes per 20 lb. of pork in feeding hogs in my present method; and it must be considered, that a Winchester of good potatoes weighs 20 lb. more than a Winchester of good barley. At 24 gallons of potatoes to 20 lb. of pork, gives 2000 lb. of pork for 30*l*.; or the pork gained by the barley, costs upwards of 7*s*. per score; or the pork gained by the potatoes, cost upwards of 6*s*. per score. But in this calculation I do not include the value of the potatoes given to hogs before the barley; and I have every where turned the scale in favour of the barley, calculating the potatoes at (what ought to be) a low quantity and at a high price.

"Again, at the above rates of feeding and produce, an acre of barley produces only 480 lb. of pork; an acre of potatoes produces 2000 lb. of pork; therefore 1520 lb. of pork is produced by feeding hogs on an acre of potatoes, more than on an acre of barley. The above rates of feeding put in another point of view: 480 lb. of pork is produced by 36 Winchesters of barley, value 9*l*. The same would be produced by 72 Winchesters of potatoes, value 7*l*. 4*s*.

"When comparing the effect of barley or potatoes in feeding hogs, the advocate for the former, should not only consider its higher price per bushel, but also the much greater weight of the produce of the latter per acre."—*C. V. P.*

RED CLOVER.

A mixture of red clover, from 5lb. to 8lb., of trefoil from 2lb. to 4lb. and from six to ten gallons of rye-grass, or eaver, are the grass-seeds most usually sown with either barley or oats in the spring, for a hay crop the next year, after which, the lands are left in lay during two or three years. Many farmers add to the above, from 2lb. to 4lb. of white clover, and some few, a pound or two of rib-grass, by way of providing for the deficiency of pasture when the red clover fails, which it naturally does after the second year. The soil in many parts of Cornwall, produces both the white clover and rib-grass spontaneously.

The evil practice in some parts in Cornwall, of taking three crops of corn before the land is laid down to these grasses, causes a thin crop of hay, plenty of all kinds of weeds, and a poor scanty pasturage; it is a discredit to the farmer, and a loss to the public; in short, the lay grounds, through any district, may be said to be mirrors, exhibiting at one view, the system of agriculture pursued in that district; affording a criterion, whereby a stranger may judge, whether it be good or bad. I hope I may say, that this ruinous system does not prevail to any great extent in Cornwall.

HOPS,

Have been much grown in Roseland, but the culture is on the decline: the duties increasing, and hops from

Kent and Hampshire finding their way here, the Cornish hop-grower is discouraged; for except he can sell at 15*d.* per lb. it is a losing crop; half a pound to a hill is a great crop. The hills are manured every second year, renewed every seventh or eighth; their poles are too low, seldom exceeding nine or ten feet, but they have a good method of training the hop-binds by straw ropes, which stretch from pole to pole, and again transversely; the poles cost from 12*s.* to 16*s.* per dozen, and are principally of pollard ash: the tying to the pole is by rushes. The hops are subject to mildew, and produce hardly one quarter of a pound per hill, on an average. Their culture takes up much time in a busy season, and some portion of the best manure, of which much should be sand: they do well under apple-trees.

SECT. V.—CROPS NOT COMMONLY CULTIVATED.

BEANS AND PEASE.

The presumed objection to the general introduction of these crops, has been noticed under the article, Course of Crops: and as the culture of them is confined to orchards, or other small plots of ground; and as nothing new or peculiar in the management of them occurred in my Survey, information on the subject cannot be expected.

TARES.

From my own experience in this county, I can with truth say, the same objection does not lie against the most extensive culture of this inestimable plant, provided t be sown with the view to soiling, towhich it is certainly *best adapted;* the advantage of this crop as a green fallow, and its value as an early spring food, are incalculable. The soils of Cornwall are peculiarly genial to their growth, and so is the mildness of the climate, causing them to come early, if they have been sown in the proper season.

I have just now (April 1808), walked over two fields sown with this pulse; the soil and aspect similar; the one sown early, the other late; the contrast is striking, and evinces the necessity of sowing tares early. The complaints alledged against this plant, that have come to my knowledge, have generally originated in the error of sowing too late in the season. Mr. Middleton says, "the time of sowing is from the middle of August, to the middle of October. Those sown in August 1794, stood the long and severe frost of the following winter perfectly well in Surrey*."

There are two sorts, the winter tare and the spring tare; the seed of the genuine winter tare differs from the spring tare, being smaller and jet black. It is most sown, and sufficiently hardy to bear the severest cold of our climate. The spring tare is of a larger size and motley, will not stand a severe winter, and their seed not being kept distinct, may be one reason for the occasional failure of the crop.

"I have great doubt about the justness of the recommendation of the winter tares in Cornwall; they will, I believe, bear the frost well, but I am by no means convinced that they will so well bear alternate changes of wet and dry, to which our climate is subject; if the crop be at all uncertain, the great expense of the seed would be fatal to it. It is commonly at the price of 6*s*. or 7*s*. the Winchester: this year (1808), at the enormous price of 1*s*. a quart. In some counties, where there is a deficiency of grass, the tare is invaluable; but in Cornwall, water-meadows; artificial, or even natural grasses in a sheltered situation, are full as early; the wetness of the climate here also, forms an objection to the making tares into hay. It is very usual to give the number of cattle fed on green tares, and to compare them with the number fed on grass, but generally the tares in this comparison are cut and carried to the cattle, and the grass is fed on the ground where it grows, which comparison can never prove any thing more, than that it is better to cut green fodder for cattle, than to depasture them; the fair comparison would be between cut clover or grass, and cut tares, and in this case, I believe, the former would be nearly, if not quite as profitable as the latter, and a much more certain crop."—*R. W.*

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* Middleton's Report.—See the Report also for the general management of the tare crop.

CARROTS.

These have been grown by a few gentlemen in the county, but some failing crops have discouraged the culture.

SAINFOIN.

The first place where I met with this grass in my Survey, was in the hundred of Stratton, on Mr. Trood's farm in the parish of Poughill. It is a field of five acres, situated on a commanding eminence, and the very identical spot of ground, whereon a memorable victory was obtained, on the 16th May, 1642, by a comparatively small body of forces of that unfortunate monarch Charles I., commanded by Lord Hopetoun, over 4400 of the Parliament Army, under the Earl of Stamford, advantageously posted on this steep hill, hence called Stamford-hill, with 13 pieces of cannon; who, notwithstanding, were completely beaten, with the loss of their camp, baggage, ammunition, and cannon. Mr. Trood shewed me a wheel of one of the cannon, which he had found in ploughing up the field: it seems to be made of lignum vitæ, hard as iron, and perfectly sound: balls and bullets have also been picked up; but from the horrors of desolating war, and all its menacing instruments of death, let us turn again to the pleasures of the noble and useful science of Agriculture.

This field was a three years ley, the soil a rich free loam, upon a species of the schistus, was ploughed up about Christmas, and during the following spring well tempered by tillage, dressed with a compost of sand and earth, and turnips sown at Midsummer, which were eaten off by sheep (an excellent preparation); and about April sown with four Winchester bushels of sainfoin, and seven pounds of trefoil per acre: it produced one ton and a half of hay per acre, of the finest quality, on which cattle throve amazingly; the after-grass was abundant, and afforded full bite for bullocks and sheep so late as Christmas; it was then shut up until spring, and again full stocked through the summer. There was a good plant of sainfoin when I walked over it in September 1807. "Still good, August 1809."—*C. V. P.*

Mr. Sickler, an intelligent enterprising agriculturist in the western part of the county, gave this grass a very fair trial; he cut it for hay two years, but the third

year

year it appeared to be declining, and at last yielded to the natural grasses.

LUCERN.

"It is obvious that much information cannot be be given on the subjects of lucern or sainfoin, as they are plants little cultivated, and nearly new to this county: the great enemies probably to their success here, will be grass and weeds, with which our fields abound, owing to the moisture of the climate. There are instances, however, of lucern, where it likes the soil, so establishing itself, as to flourish in spite of weeds."—*R. W.—C. V. P.* 1810.

CABBAGES AND RAPE.

A small spot of these for the use of cows, is to be met with here and there; but I have learnt nothing new or peculiar in the culture or application.

CHAP. VIII.

GRASS LAND.

SECT. I.—NATURAL MEADOWS.

THE lands in Cornwall which come under this description, are to be met with in the vicinity of towns and villages, on sheltered slopes, in valleys, level and moist situations, on the banks of the great rivers; and most farmers select a field or two near their homesteads, which they appropriate to the feeding their calves, or milch cows, early in the spring.

I am happy to see that the watering of meadows is becoming more common in Cornwall; other meadows that are not so truly fortunate in situation, as to partake of the benefits of this principal improvement in husbandry, receive a coat of dung, or compost, or house ashes, every two or three years. They are alternately fed and cut for hay, and I know of no restrictions in the leases from breaking them up: but Cornwall not being chiefly a dairy or feeding country, there is very little worthy being recorded in this department of its husbandry.

SECT. II.—PASTURES.

THE natural pastures consist of the uncultivated lands, which in Cornwall are distinguished by the names of moors, downs, crofts, and wastes. Nature has clothed them with two species of furze; with ferns, heath, and the poorer kinds of grasses, which are depastured by cattle, sheep, and goats; to the latter of which animals a great proportion of the coarser lands, particularly in the mining districts, are adapted.

Cultivated Pastures.—These are such as have borne two or three successive crops of corn, with the last of which grass-seeds have been sown: they remain as pastures from two to three, or five years, before they are again broken up for corn.

SECT. III.—HAY HARVEST.

THERE are many intelligent agriculturists in this county, who well understand every part of the process of converting grass into hay: and I sincerely wish, their influence and example may operate the conversion of a more numerous body of hay-spoilers.

The generality of farmers in Cornwall, either do not understand this branch of the rural art, or they entirely misconceive the properties which constitute good hay. By their method of conducting the business, exposing it too much to the sun, without sufficient turnings, the grass is bleached nearly white, and its nutritious juices exhaled. Another error they commit is, in the degree of ripeness at which they choose to cut it, they judge by the top instead of the bottom, in forming their criterion of maturity, and seldom think of cutting their artificial grasses until the rye-grass has ripened its seed; the bottom by this time is turning yellow, and much of the under foliage of the clover has fallen; this error drives them into another, that of delaying the hay harvest until the middle of July, a season which may be said to be generally rainy. The want of a due proportion of winter food, and watered meadow, obliges many farmers to stock their grass-seeds late in the spring, and this bad practice precludes the possibility of making hay "while the sun shines." To ensure an early hay harvest, all stock should be withdrawn from the lands before Christmas.

CHAP. IX.

GARDENS AND ORCHARDS.

SECT. I.—GARDENS.

OF cultivated grounds, those are of the first importance which come under the description of gardens, which supply the cottager and labourer with esculent roots and vegetables in sufficient quantity for his family, and allow him to keep a pig upon the refuse; these are pretty general, and many of them can boast an apple-tree or two, with gooseberry and currant bushes; the leek, onion, and parsley-beds, are particularly attended to, and though in detail they may appear little and trifling, yet to a labouring man and his family, they are a principal comfort and convenience. In addition to these advantages, the farmer allots a small piece of land to his labourers for the growth of potatoes. The farmers have their kitchen-gardens for an early production of turnips, potatoes, and cabbages; these articles help out the pork, mutton, and beef, at the hay and corn harvest dinners.

The gardens annexed to the residences of gentlemen, are specimens of taste and embellishment, and supply almost every kind of delicious fruit. The mulberry-tree flourishes in the western parts, and brings its fruit to maturity: in a word, horticulture seems as well understood in Cornwall as in any other county.

There are various nurseries, whence gentlemen are supplied with fruit and forest trees of all descriptions, but there is nothing new or interesting in the management of them.

SECT. II.—ORCHARDS.

In sheltered situations, many of the farms are furnished with orchards; but I am sorry to find, that in some of the western parts of the county, the orchards have of late years been very much neglected, and that the cultivation of them in general does not prevail so much as in Devonshire. It would certainly be beneficial, if in leases there were some clauses binding landlords to find fruit trees, and tenants to maintain and preserve them; by keeping up the number of trees, by occasional application of manures, particularly after a productive year of fruit, by a judicious use of the pruning knife (which appears to be very much wanted), and above all, by leaving off that too common, but destructive practice, of turning all sorts of cattle into orchards, pigs being the only animal that should not always be excluded. Careful, intelligent managers of orchards, cut down the grass and weeds once or twice in a summer, and lay them about the roots of trees; and are particularly attentive to cut off, by drains, any wet there may be, to clear and pare up the fence; and if they should have occasion to break up the ground, they sometimes sow pulse, but more frequently turnips or potatoes.

The orchards which I have seen in different parts of Cornwall, under this kind of management, appeared to be healthy, thriving, and productive. In this county, great judgment is required in the choice of situation, soil, kinds of trees, and sorts of fruit, the manner of planting and after management of orchards: all which particulars are comprized, and accurately detailed in the following paper, written by Wrey I'Ans, Esq. of Whitstone; and I am glad to have it in my power to communicate so much useful information.

" The orchards of the district I treat of, are much neglected, and are not generally found to thrive. Yet this defect may be partially cured, since it often arises from *ill-chosen situations*, from want of skill in the choice of trees, and in the manner of planting. The first evil arises from a partiality in the inhabitants to plant orchards close adjoining to their houses (to prevent plunder), however much these houses are exposed to the sea winds, which not only hinder the trees from bearing fruit, but in a few years destroy them. The *next* evil arises from breaking the soil to a considerable depth, and planting the trees in the pits so made, which, in the generally stiff soil of this district, is like planting in a well; consequently, trees so planted are long in thriving. This practice is still common, though many have learnt from experience, *a much better mode;* full directions for which, follow, being the result of my observations and experience in this neighbourhood.

" The seed may be procured from the *cheese* (or substance of the apples after being pressed for cyder), which should be covered in February, or earlier, with light earth, and protected from vermin. This will produce a great variety of stocks, and out of these it will be easy to choose the *hardiest*, resembling the crab, or the thorn, in leaves and spines. The sort of apple to be reared for cyder, should be suited chiefly to the *situation* or the spot intended for an orchard; if the planter should be reduced to the necessity of fixing on an high one, he will prefer, out of the little choice he may have, that situation which is most sheltered from the west and north-west winds; and his apple trees, in this case, should be of that sort, with slender limbs, bending downwards, such as in this neighbourhood are called *back-a-mores*, and others of like growth, and the *apples* of a *hardy kind;* for the *blossoms* of such (on which so much depends), are hardy also, and not so subject to blights as others are, and bear better the effects of *winds from the sea*. These trees should not exceed four feet in height to the first limbs, and if *much exposed* to winds, the lower the better; they should have been transplanted *yearly* in the nursery, and none but horizontal shoots suffered to grow; and should be planted in the orchard at *four* years old from the graft at furthest; the head being formed by keeping the centre chiefly open; a *moderate* quantity of pruning will best answer in such situations.

"From the beginning of October to the latter end of November, will be the best *time* of planting on ground previously manured, and which has produced crops of turnips or potatoes. They should be planted about 21 feet asunder; and the roots covered with earth, taken from the centre betwixt the rows, out of a trench in width three feet, and in depth proportioned to the soil. On these beds pease may be repeatedly sown, and the stalks left to decay, for the benefit of the trees, keeping the soil warm, loose, and moist; and some such tillage, being repeated, will add much to the growth of the trees. If *furze* be strewed thick over the surface, and suffered to rot there, it will be found to be the cheapest and best manure for apple-trees.

"Although I do not propose the converting our few and valuable meadows to orchards, I would recommend the enclosing the slope of a hill, to the brook or bottom for this purpose, planting *on the surface* (in no case below it), or *higher*, in proportion as the soil is more or less dry. Trees of different sorts, as well sweet as sour fruit, should be planted; but few of those called table fruit, since the bearing of such is uncertain. In the moister soil, take from the centre betwixt the rows, earth in width 18 inches, and in depth proportionable to the good earth (say nine inches), and with this, raise the beds highest in the middle where the trees are to be planted; place the trees thereon, and cover the roots with the remaining earth of the centre alleys, taken at the same depth, and widened from 18 inches to four feet; where springs intervene, turn back the earth of the beds to the necessary width and depth; place in the trench loose stones (such as are found on the surface), and if these are covered 18 inches deep with good soil, the tree may even here be planted to advantage. The drains should be kept open to the alleys, and may easily be made to communicate with the brook. Where the earth does not exceed nine inches in depth, with a subsoil of yellow stiff clay, whereon alders grew, and where horses could hardly pass, have I known apple-trees to thrive with very little expense, infinitely better than on the adjoining drier and better soil; and it is certain that lands, not suitable to other produce, nor worth two shillings per acre, may be turned with little cost, to thriving orchards.

"Low situations in this county and district, are every where, without exception (but chiefly near the coast), an object more to be considered and sought for, than soil, which may easily be amended, or altered, so as to suit the *roots* of apple-trees; these, before planting, should be trained horizontally, and as nearly as may be at equal distances, *one tier* of roots (particularly where the soil of the intended orchard is shallow), being, for the most part, better than *two*.

If a low and sheltered situation can be found with a northern or north-eastern aspect, as the blossoms will later unfold themselves, so will they be less liable to blasts in the spring, than on a southern aspect; and such I have known to answer well for both cyder and table-fruit; yet far the greater part of our orchards face the *south*; and I have remarked and do believe, that the apples there grown, and the cyder produced, from such aspects, is higher flavoured, than from the north. I was once an advocate for planting apple-trees of a larger size, and much higher in the stem, as being more secure from injury by cattle than such as I here recommend; but time and experience have convinced me, that in this county, the *younger* and lower the stem, the more likely the trees are to take root, to thrive, and to escape from those blasts to which the sturdier, but higher oaks are forced to yield.

" It may be thought almost useless to recommend any one sort of apple in preference to another; but I find the golden-pippin and nonpareil more liable to the canker (a disease very common here), than most others. It may be necessary to add, that the *greatest* care is needful in planting, to divide the roots at equal distances from each other, paying more regard than is usually shewn to the direction of the extreme *points*, as most likely to prevent the future galling, or robbing each other of nutriment."

CHAP. X.

WOODS AND PLANTATIONS.

WHOEVER confines his travels in Cornwall to the route of the main roads, will perhaps be impressed with ideas of its barrenness; but if the traveller will make a little deviation from the beaten dreary tract, he will frequently be repaid by rich woodland scenery. In the valleys and dells, and on the steep-sided hills, which form the banks and shores of the rivers and creeks, woods and coppices abound; and a few plantations of larger growth display themselves in high and exposed situations, near the seats of noblemen and gentlemen: these afford evidences, that trees of most kinds will grow, and thrive on high situations, even when exposed to the sea; provided the plantations are thick, and on an extensive scale. The trees which form the plantations, are the pineaster, spruce, Scotch and silver firs, the larch, Dutch, Cornish, and wych-elms, sycamore, beech, oak, ash, Spanish and horse-chesnut, lime, alders, and the plane tree, which was introduced into Cornwall in the year 1723, by Sir John St. Aubyn of Clowance. The pineaster and Scotch fir are found to make the best nurses, and consequently are arranged so as to take off the brunt of the sea winds.

COPSE WOOD.

The coppices are all of the common oak, and are usually cut from twenty to thirty years' growth, selling from 20*l.* to 60*l.* per acre. The principal source of profit is the bark, which now sells for 11*l.* per ton, and is purchased by tanners in the county. Some of the wood is converted into poles for farm purposes; but it may be said the greatest part is charred for the use of the blowing-houses, and domestic purposes; the brush-wood is sold for fuel. No instance of a copse being grubbed, has occurred to the Surveyor.

The reservation of saplings or standards are paid more attention to in the felling of coppices, than was formerly the case. For a comparative value of land producing coppice wood, and of land under a course of agriculture, see Appendix No. II.

TIMBER.

The falls of timber, especially of oak, during the last 20 or 30 years, have been very considerable; it is principally bought by Ship-builders; the elm, ash, and sycamore, by carpenters, wheel-wrights, coopers, &c. However, most of the proprietors of lands are directing their attention to planting, so that in 30 or 40 years, Cornwall will present extensive woodland scenery, both useful and ornamental.

"The interests of the land proprietor have in general been much neglected in this important article. Our natural woods consist of oak, and are found for the most part on the banks of rivers, and in the valleys leading towards them. Here may be seen aged and decaying timber, which, had it been fell'd 20 or 30 years since, would have enriched the owner, and benefited the public. Here too may be seen a still greater waste of national wealth, thousands of young healthy saplings struggling to get freedom and expansion, but over-topped and galled by briars and bushes of every sort. Can there be a doubt, whether an extensive land proprietor could employ a more serviceable person in such cases, than an able wood-surveyor, who had judgment to decide when a tree should be cut, and zeal and discernment to discover and protect the saplings both in woodlands and hedge-rows? It is a question of some importance, whether such a one would not dissuade his employer from felling his coppices at 20 or 25 years growth, as is the general custom here, advising him rather to thin gradually, and where a young, healthy, bright-bark'd oak appears, to mark it for a standard; 250 or 300 of which might be left on an acre at the end of 30 years, and the intermediate thinnings for the next ten years, would pay liberally towards rent and interest; another ten or twenty years growth, with judicious thinnings, might give him or his successor the highest possible profit derivable from an acre of woodland; it being a well-grounded opinion, that it is more profitable to fell a crop of timber at 50 or 60 years growth, than to let it stand for grosser purposes to 80 or 100 years."—*I. T.*

WILLOW PLANTATIONS.

"There is a kind of plantation much overlooked, which, being very profitable, is deserving of notice; especially as it is practicable on almost every farm, and within the ability of every occupier. I mean plantations of the basket and cooper's willow, in those waste and neglected corners which are to be found upon every estate. These spots should be skimmed, or broken up early in the spring, the roots and weedy surface burnt, trenches cut, and the cattle potatoe planted in lazy beds four feet wide, covering the sets with what arises from the trenches, which should be wide and deep, in order to thicken the beds, and the produce will repay the expense. In the following February, the beds should be well broken through, and freed from roots, and brambles particularly, the trenches cast, and the willow-cuttings planted 18 or 20 inches asunder; and with a little attention annually to hoeing, cleaning, and casting, a crop far exceeding any grain in value, will be produced every year from waste lands, which in their rude state are offensive to the eye, and discreditable to the farmer. The cuttings, which must be of the last year's growth, should be sixteen or eighteen inches long, and thrust half way into the beds, aslope, leaning to the hill, the cut part towards the earth, taking special care in planting, that the bark does not strip, nor the end reach the clay. A strong manure of lime with the potatoe crop, would greatly meliorate the subsoil, if it be clayey.

" In some situations the stocks will, after seven or eight years, grow into decay, when the beds should be renewed by a similar potatoe process.

" The first year's produce is usually inconsiderable; it may however pay the rent, and part of the charges incident to the improvement. Afterwards the cultivator will, by attention to hoeing and casting in the spring, be amply remunerated; the third, fourth, and fifth years, are deemed most productive.

An acre of 160 yards will require 33,000 setts or cuttings, which this year (1810) cost 8*s*. per thousand, ...				£13	4	0
Two years' rent, rates, and tithes, at 6*l*. per acre	£12	0	0			
First year's extra labour, ...	12	0	0			
				24	0	0
				£37	4	0

First year's produce, say 30,000 coopers' rods, which are required to be four feet and a half long at least, at 9*s*. 6*d*. per thousand, ...	£14	5	0			
Second year's, say 70,000 rods, at 9*s*. 6*d*.	33	5	0			
And 7000 setts or cuttings, at 8*s*.	2	16	0			
	£50	6	0			
Profit of the two first years, ...				£13	2	0
In the subsequent years, until a renewal is found necessary, the average product per acre of a well conditioned garden, may fairly be taken at 84,000 saleable coopers'-rods, which at 9*s*. 6*d*. per thousand, ...				£39	18	0
12,000 setts or cuttings, at 8*s*. per 1000, ...				4	16	0
				£44	14	0
Deduct annual rent, tithe, &c. per acre				6	0	0
Clear profit per acre, ...				£38	14	0

" The refuse dwarf willows, or offal, as it is termed, are used in the fisheries and basket-work, and will pay, *communibus annis*, for the labour. The coopers'-willow differs from the common, or basket-willow; the former is known by a single gem or eye throughout the rod, which simply throws out a leaf; the latter by a double or flattened eye, which produces a branch or sprig. The former is applicable to every purpose, the latter the cooper rejects; of course the former should be propagated; care therefore must be taken, that the cutting be solely from the coopers' rod; if it be taken from the double gem, or flattened eye rod, none but the sprigged or common basket-willow will be produced. Willows are sold for basket-work, either by the lump or by bundles two feet and an half in girth, at two feet from the butt-end, and this year at 1*s*. 6*d*. per bundle, and are said to be more profitable to the grower for this purpose, than for coopers' work. A neighbouring farmer received 9*l*. 5*s*. for one-fourth of an acre of willow ground, which he sold this year to a basket-maker by the lump.

"On the whole, it is obvious that the greater attention that is paid to this valuable plant, the greater will be the profit; for as every willow of seven feet, offers the double product of a cutting and a cooper's or basket rod, the ratio of profit will depend upon the growth, and that upon the management and cultivation of the plant. It may be remarked, that where willows are not cut every year, they degenerate, but, though less profitable, are still useful for the fisheries, and the coarser basket-work, as well as for thatching, and other farm purposes."—*I. T.*

CHAP. XI.

WASTES.

THE coarse or uncultivated wastes of this county, though, as elsewhere, of much less value than the enclosed lands, have yet their appropriate uses. A hardy race of herds and flocks depasture the coarse herbage of the more level parts; goats climb and browse the rocky summits, and the wild conies feed and burrow among the sandy hillocks. The lands in Cornwall, which come under this description, bear striking marks of ruggedness and deformity. Viewing these lands with an agricultural eye, they present a wide field for speculation. The pasturage of the moors, downs, and *crofts*, as the waste lands in Cornwall are called, is generally considered to belong to the tenantry, in the right of some manor or lordships, to which such wastes are appurtenant; and consequently, as in most cases of common lands, the pasturage is by no means equal to the stock.

A practice has prevailed in this county for many years past, and still prevails, of breaking up detached parcels of the waste lands, paring and burning, sometimes liming or sanding them, and after taking as much corn as they will carry, letting down the temporary fences, which had been raised to secure the crops, and then suffering them to run to waste again, in tenfold worse condition than they were in a state of nature. If however a farmer can, by growing corn on commons,

mons, spare the enclosed estate which he occupies, or enrich it by bringing home the straw for manure, it becomes a question, whether he may not have acted wisely for his own interest at least; and then it will become a doubt, whether he may not have acted also for the benefit of the community at large, as on such subjects private and public interests are seldom, if ever, found to be at variance.

In the present case the fact is, the farmer is tempted to break up a piece of coarse land with a view to profit; but that when hedging, beating, burning, and all expenses are taken into the account, he will be found a loser in the end, exclusive of some neglect probably on the home farm, by paying attention to this more distant business; and this indeed has been the actual result of the experience of some farmers. Many of these waste lands are certainly capable of improvement, but calcareous manures, either lime or shelly sand, seem to be indispensable in the attempt: therefore until canals are formed, for the conveyance of these anures to the more internal parts of the county, there is little hope of seeing them improved to any great extent. There are dispersed over the wastes to the westward of Truro, which is the principal mining district, many hundreds of cottages, and the waste land about them, is enclosed in small patches, and brought into good culture by a description of people of the labouring class, which may be called cottage lease-holders. They are principally labouring miners, and they thus build and enclose upon leases of 99 years, determinable on the deaths of three lives of their own nomination. Each of these leases conveys to the cottager for the time specified, three acres of the waste land,

and subjects him to the building of a cottage, and the payment of an annual rent of ten shillings. *But here follows a dreadful hardship on this poor industrious class of labourers.*

The Property Act, by including this class of indigent cottagers in the impost it lays upon land, has operated greatly to harass and distress them, and as the framers of this act could not have had such cases as *these* in their contemplation, it unfortunately contains no provision for their relief. Did this observation tend in any degree to the removal of this grievance, I should feel no small recompense for the time and pains I have bestowed upon this Survey.

Mr. Wallis, Secretary to the Cornwall Agricultural Society, has favoured me with the following remarks on waste lands.

" It is computed that there are in Cornwall, at least from 150,000 to 200,000 acres of unenclosed waste lands, which are appropriated to no other purpose than a scanty pasturage for a miserable breed of sheep and goats throughout the year; and about 10,000 acres to the summer pasture of cattle and sheep: the principal and most profitable tract of these waste lands extends from south to north, between the towns of Liskeard, Bodmin, Camelford, and thence to within a few miles of Launceston; particularly those called Roughtor, Temple, and Alternoon Moors: some of these wastes are stocked in the summer by large flocks of sheep and cattle, which are taken in to pasture by the tenants of the neighbouring farmers, from about the middle of May until October, at 2*s*. to 21*s*. per head for neat cattle, and 1*s*. to 3*s*. per score for sheep. Herdsmen are employed by these tenants to look after the flocks during these months, whose business it is to restore them to their owners, at the end of the time agreed on.

"The sheep pastured on these moors will not remain there healthy during more than a month or two at a time, but become what is called moor-sick, and are removed into the inland country, when the change of a few weeks renders them fit to return to the moors again.

"These wastes also produce some furze, and excellent turf, which are the chief fuel of the neighbouring inhabitants."

CHAP. XII.

IMPROVEMENTS.

SECT. I.—DRAINING.

THIS excellent mode of improving and making of land is well understood, and has long been practised in Cornwall. Many hundreds of acres of land which, before they were drained, were not worth one shilling per acre to the owners or occupiers, and were even dangerous for cattle, have been, by this operation, improved to the value of from 3*l.* to 5*l.* per acre. The advantages immediately resulting from the practice, are so striking to the meanest capacity, that the tenantry who have any permanency in their holding, are excited to undertake the improvement at their own expense. In short, the exertions which have been made in draining, throughout this county, for some years past, and which are annually making, would require a little volume to detail them; the practice is happily well established. In some instances, landlords drain for their tenants, charging an interest upon the money expended.

The Surveyor has met with nothing new or peculiar in the modes of executing this capital improvement The drains are generally stone gutters, upon which are sometimes thrown small leased stones; the whole covered with earth, sufficiently deep to admit the operations of the plough. In some instances, reed or brushwood is placed on the covered stone gutters, to prevent their being choked with earth. Some have used turf for forming the gutters, laying it upon two shoulders, made by narrowing the bottom of the drain; but the circumstance of the moles making their way through the turf, is an objection to this mode. Green faggots have been used, for keeping the drains hollow and open, but this mode has failed also, and stone is preferred, wherever the expense is not great in procuring them, which is seldom the case in any part of Cornwall.

One instance only has occurred to the Surveyor, where the borer has been used, and then with the best effect. Mr. Robarts, of Newlyn, being about to drain a piece of ground, tried the borer, which having done in two or three places, the water gushed out freely, and it effectually drained a large piece of ground which he had intended to drain by gutters; but the judicious use of the borer saved all that expense. But the borer will be frequently rendered useless, by the soil of the bogs in this county being often mixed with stones.

Mr. Robarts is making great exertions in the mode of recovering and improving land, which for ages has not only been useless, but dangerous, from confined and pent up waters.

A spirited improvement of this description is this year (1808) carrying on, at Trewarthinick, the seat of Francis Gregor, Esq. by which a moor upon the river Fal, consisting of 30 acres of no value, will be converted into the finest meadow land; an example worthy of general imitation. A great breadth of this moor is already completed (July 1808), and planted with potatoes, promising an abundant crop. This moor was in a state, of which none but an inhabitant of Cornwall can form any idea. It had been formerly streamed for tin,

tin*, by which operation the soil had been turned under and buried, and the subsoil and gravel heaped upon it in large irregular mounds. In this state, sedges, rushes, furze, and stinted brushwood, occupied it wholly, and after many attempts to reclaim it, the farmer had relinquished it to the sportsman; moreover, the river frequently overflowed its banks, and deluged the lower parts of it. The mode of improvement was (after clearing it of the furze, &c.), by leveling, preserving such portions of soil as could be saved for the surface, and by planting it with potatoes, or sowing it with turnips. To prevent its being again overflowed, levels were brought up from high-water mark through the bed of the river.

A further improvement was begun on the opposite side of the river, of which the following is an accurate description.

The river, which is at all times foul, but particularly so after rain, was ponded back, and in such a manner, that the upper surface of the river was permitted to flow over the land. The deposit made by this mode of ponding, consisted of the lightest particles, the heavier ones, particularly the gravel, sinking lower in the pond. By this means, in no long time, a new soil can be formed, and be thickened at pleasure, by the same operation. The land, when the experiment was tried, not being in Mr. Gregor's occupation, the practice has not been fully carried into effect.

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* Streaming for tin, is searching for granules of tin, which lie in horizontal strata, from 6 to 100 feet below the surface. The tin intermixed with the gravel is washed in a stream of water carried through the work, and there separated from all impurities, and hence called streaming. The old land of the stream-works was left in the devastated condition above described. Of late some regard has been paid to this subject by the more considerate landlords, and the tinner is generally bound to level the ground, and duly replace the surface soil.—*R. W.*

In a county like Cornwall, where four parts in five of its outline are exposed to the sea, it would be matter of surprize if some part of its boundaries were not subject to encroachments, either by throwing up the embankments, and thereby preventing a free outlet to the rivers, or by its overflowing other parts, when swelled by storms or high spring-tides. The Lo Pool near Helstone, is an instance of the first kind; a tract of land upon the river Hayle, and another in Gulval, near Penzance, are instances of the latter description. Part of a large parcel of land lying between Marazion and Penzance, was drained and reclaimed, according to a plan projected and executed by Mr. Moyle of Marazion, with which he has very kindly obliged the Surveyor, in the following Letter.

" *Marazion, 4th April,* 1808.

" DEAR SIR,

" In consequence of your request, and for the sake of promoting the improvement of land in a similar situation with what I have drained, I beg to transmit you the exact plan which I pursued, and for which the Society for the Encouragement of Arts, Manufactures, and Commerce, honoured me with a Gold Medal in 1795. This mode of draining is novel, or at least I never heard of such, when I first began it, and which may be applied to lands under similar circumstances.

" I am, dear Sir,
" Your obedient humble servant,
" RICHARD MOYLE."

" In all those situations, where lakes are formed near the sea, having access to them at spring-tides, it is impossible to effect a drainage by the ordinary modes, from the want of levels; and of course, such parcels of land, from being constantly covered with water, become unprofitable to the proprietor, and offensive to the public, by producing agues, low nervous fevers, &c. Several marshes, and some small lakes in this county, fall under this description, and have been looked on as irreclaimable, on account of the sea, at spring-tides, being several feet higher than this land; so that no levels, by the common modes of draining, can be procured to carry away the internal springs and surface-water. Purchasing an estate near Marazion in 1790, where a piece of land about 36 acres was constantly covered with water and overflowed at spring-tides, so as to leave about two feet of water over its surface, I was induced to try an experiment of draining this land, by opening a sluice or drain about 8 feet below the sea, at high-water, which, though numerous obstacles presented themselves to the completion of my scheme, I perfected; and the land, already cultivated, is become of considerable value, from the production of oats and pasture.

" Previous to the commencement of such an undertaking, it is necessary to form an accurate idea of the probable quantity of water which may be furnished by the under springs and rain; so that a pipe of sufficient size may be provided to discharge both, and to render the surface completely dry, previous to any agricultural operations. To elucidate this mode of draining more clearly, I have subjoined a plan (see *Plate* IX.) of my improved land. This marsh is situated in the parish of Ludgvan, about a mile from Marazion, and contains about 36 acres; it exposes its south side of 630 yards towards the sea, from which it is separated by a large body of sand of 174 yards, over which the road leading to Penzance passes, and which serves as a natural embankment against the sea. On taking an accurate survey of the levels from the sea, at the point of half ebb, to the surface of the ground in the marsh, being a distance of 174 yards, it was found that six feet of levels could be gained, after allowing two feet for the run or flowing of the water.

"This drainage was effected by means of a square wooden pipe of nine inches diameter, introduced from the point of half ebb through the sandy embankment, till it arrived at the marsh. This arduous undertaking was performed by throwing open the sand by a number of workmen, nearly at the level of half ebb, so as to give the pipe a very gentle elevation of about fifteen inches to every hundred yards, as it approached the marsh. The two first pipes were secured by large rocks, to prevent them from swimming, and the others were successively joined, each pipe measuring about twelve feet in length, and the wood an inch and an half thick.

"The deepest part of this sand was about 24 feet above the pipes, so that the difficulty of getting to a sufficient depth in this place became very great, as the sand was apt to run on the workmen, and required the opening on the surface to be 40 feet. As we approached the marsh, the depth of sand became gradually less, so that the pipe was introduced into a reservoir about six feet under the surface of the land: the aperture of the first pipe in the sea had iron bars placed before it, to prevent the insinuation of sea-weed, &c. and also a valve, made of strong wood, hung with leather, and loaded with a plate of iron, to prevent it from swimming at the approach of the tides, which shuts it so close as to effectually exclude the sea-water, which at high spring is about nine or ten feet above the pipe. There is also another valve in the last pipe, near the reservoir, to assist the total exclusion of the sea, in case of any accident happening to the other valve. The pipe which projects a few feet into the reservoir, is considerably larger than the rest, and bars of oak of an inch square are placed upright, to exclude any extraneous body from getting into the drain; it was found necessary to add a short piece to the sea-pipe, about a foot and an half long, to prevent the intrusion of pebbles between the valve and the pipe, which might obstruct its closely shutting; some little difficulty likewise arose from the confined air in the pipe, at the approach of the tide, but this was removed, by introducing an erect small pipe, of about an inch and an half diameter, through the cover of the pipe nearest the reservoir, so as to carry away the air confined between the two valves, at the approach of the sea, which prevented the discharge of the marsh water till the return of the tide, during which time the water accumulates in the reservoir and trenches to the height of three feet. These pipes were square, and made of balk, of one inch and an half thick, and secured together by oak pins instead of nails, which would soon decay in salt-water; but I would recommend circular pipes of elm, which, from their shape, are not so liable to be injured as square ones.

“ The reservoir is eighteen feet square, and eight feet deep, from which on each side, a main drain or trench is carried to the extremity of the marsh on its south side, whilst other trenches running north the whole length of the marsh, at the distance of 120 yards, discharge their water into the main drain, so as to divide the whole into fields, which are subdivided into ridges of nine feet wide, across which, at the distance of every twenty-five yards, is a furrow to collect and convey the surface-water into the long trenches, so as to keep the whole completely dry. The main drains are from six to four feet deep, five feet wide at top, and two feet and an half at the bottom.

" The substance of this marsh ground, to the depth of six feet, is of a peaty kind, mixed with a muddy sediment; below this is a stratum of sand, about five feet deep, which carries evident marks of its being the bed of the sea, of a very ancient date, and which has been gradually excluded, by the accumulation of a muddy sediment, and the dropping of the leaves of aquatic plants, which united, form *peat-moss*.

" As soon as the drainage was effected, a strong embankment of turf was made around the marsh, so as to prevent the river, surrounding its two sides, from overflowing the land, and through which river the sea flowed at spring-tides. The danger arising from the approach of the sea, was also prevented by a flood-gate, placed in a narrow part of the river, which always shut by the coming of the tide, and opened again on its return.

" As soon as this land was completely drained, and became firm, it was frequently ploughed, harrowed, and burned, so as to pulverize it: large bodies of clay, sand, and manure, were carted on the same; but the saltness of the soil, from its being covered with the sea for ages, prevented any crops from vegetating for the first three years; after which it was repeatedly covered with fresh water, which so ameliorated the soil, by dissolving the saline particles, that crops grew in great perfection on the fourth year.

To bring humble merit, and examples worthy of imitation to light, I conceive to be among the objects of the County Reports, I therefore record the following instance of the effect of patient labour and persevering industry.—William Pearce, of Turf-house, in the parish of Landewednack, near the Lizard, a day-labourer earning only one shilling a day, and supporting a family of seven children, when he was fifty years of age, began, after his daily labour was finished, to drain and cultivate twelve acres of swampy ground, which, after eighteen years labour, produced in 1803 ten bushels of wheat, ninety bushels of barley, besides six bushels of oats, Cornish measure, and nine trusses of hay, besides pasture for cattle. This he effected himself, with only an old mare to assist him in carrying manure from a considerable distance. He also built his own dwelling-house and out-buildings, covered and finished them himself, although he was only bred to husbandry, and had a natural infirmity in one of his hands.

Account of an Improvement on Two Acres of Waste Land, in the Parish of Kea, by Philip Rowling.

The land lies at the bottom of an enclosed common, not worth more than 1*s.* 6*d.* per acre. The surface had been cut and carried off for turf, the remaining soil, peat and stiff clay; in the winter so much overflowed with water, that cattle could not pass over it, without great danger.

In the year 1795 it was guttered to the depth of six feet, then levelled, and earth laid on, at the rate of

1250 cart-loads per acre, brought from the distance of half a mile, afterwards manured with 120 loads of dung per acre, and then planted with potatoes.

The Expense of One Acre (Cornish).

1797.	Draining the land, carriage of stone and earth.						
Potatoes.	Dressing, seed, and labour, - - - -				£37	7	0
1798.	Dressing, seed, and planting, -	£11	10	0			
Potatoes.	Rent, - - - - -	0	1	6			
					11	11	6
1799.	(No dressing), seed and labour, -	2	10	0			
Wheat.	Rent, - - - - -	0	1	6			
					2	11	6
1800.	Labour, seed, and grass-seeds, -	3	3	0			
Oats.	Rent, - - - - -	0	1	6			
					3	4	6
1801.	Cutting and saving, - -	0	12	0			
Hay.	Rent, - - - - -	0	1	6			
					0	13	6
1802.	Dressing, cutting, and saving, -	5	10	0			
Hay.	Rent, - - - - -	0	1	6			
					5	11	6
1803.							
Lay-grass.	Rent, - - - - - -				0	1	6
1804.	Seed, ploughing, harrowing, dressing, &c.	6	0	0			
Wheat.	Rent, - - - - -	0	1	6			
					6	1	6
1805.	Ploughing, harrowing, seed, &c. -	2	4	0			
Barley.	Rent, - - - - -	0	1	6			
					2	5	6
					£69	8	0

N. B. The land at this time worth 50*s.* per acre.

Produce of One Acre.

1797.	80 bushels* of potatoes, at 5*s.* - -				£20	0	0
1798.	105 bushels, at 8*s.* - - -				42	0	0
1799.	11 bushels and an half of wheat, at 28*s.* -				16	2	0
1800.	17 bushels of oats, at 7*s.* - - -				5	19	0
1801.	Two tons of hay, at 4*l.* 10*s.* -	£9	0	0			
	After grass, - - -	1	0	0			
					10	0	0
	Carry forward, - -				£94	1	0

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* The Cornish bushel of 24 gallons; bushel of potatoes, 220 lb.

	Brought forward,		£94 1 0
1803.	Grass,		2 0 0
1804.	12 bushels of wheat, at 40*s.*	£24 0 0	
	Arrish grass to Christmas,	0 10 0	
			24 10 0
1805.	18 bushels of barley, at 13*s.*		11 14 0
			£142 5 0
	Expenses,		69 8 0
	Clear profit,		£72 17 0

SECT. II.—PARING AND BURNING.

THIS process is, with much propriety, arranged under the head of Improvement. The general opinion throughout this county is, that a more prompt and efficient improvement cannot be devised; and accordingly, it is the usual and prevailing preparation, for the conversion of old tough lays and furze or heathy waste grounds into tillage. The process commences with paring the surface of the land, and the operation is performed, either with the common plough, the beating-axe, or the skimming spade. The plough is used for lay grounds, the two latter implements for coarse grounds.

There are three methods of using the plough in preparing the sod for being burnt; the first is, with a broad stripping share, cutting it thin and turning the whole over with the grass downwards; this is done early in winter for turnips, or in the spring for wheat, and after lying some time, either cross-ploughed or tormented, then harrowed, and such proportion of it burnt, as the farmer may think expedient. Some burn a large portion of the earth, others harrow the sod, until till little beside the roots and weeds remains for burning. A second method is, not to strip the lays clean, but to leave a narrow strip of ground whole, on which they turn the furrow-slice. This is provincially called "turning to rot, sometimes vore and comb (*i. e.* furrow and comb), and sometimes ribbing." The general term is baulking. These ribs, after lying some time to rot, are well harrowed and rolled, and the roots and grass raked together in heaps, and burned. The third method, provincially *velling*, is performed nearly in the same manner with the former, excepting that, instead of being turned over, the furrow-slice is cut with its turf upwards; this is drawn out with small crooks, by women and boys, or harrowed, and then raked together in heaps, and burned.

This mode of velling is usually adopted when there is not time to permit the sod to rot, as in the former methods.

The turf cut by the spade or breast-plough, and by the beating-axe, is carried to heaps, and burned, without any endeavour to separate the earth from it; a large quantity of ashes is produced, which being regularly spread over the stripped surface, the process finishes. By this grand expeditious stroke of husbandry, hosts of enemies, such as insects, their larvæ, and seeds of weeds, are at once destroyed.

Most farmers, in addition to this dressing of the ashes, carry a portion of lime or sea sand. I saw these labours carrying on last autumn, in many parts of this county, on lands then not worth 1*s.* 6*d.* per acre. I saw them again this autumn (1808), under ample crops of wheat, averaging from twenty to twenty-five Winchester bushels per acre. I observed with pleasure too, on the wheat-stubbles of last autumn, after this process, that some farmers had secured a very pretty picking of turnips for sheep, by sowing the seed among their growing wheat in the month of May, which is a common practice. They informed me it would not answer on old arable lands, but only on lands newly broken up, provincially breach-ground.

If after a good crop of wheat, and a tolerable crop of turnips, avarice or rapacity should instigate the farmer to scourge the willing land with two crops of oats, the last with rye-grass seeds, to be cut for hay, the opponents to paring and burning, will not fail to seize the opportunity of condemning the practice, and attributing the impoverished state of the land to a wrong cause. Did the farmer, after his turnips were eaten off by sheep, sow in the ensuing spring, a crop of oats, with hay-seeds, adapted to the nature of the soil, not to be cut for hay, but fed by sheep, he would have brought neither censure upon himself, nor disgrace upon the system. Another mode was adopted by Lord de Dunstanville, who had several acres of land at Tehidy-park drained, pared, burnt, and levelled, and upon one ploughing, sown with grass-seeds without corn. It was extremely well executed, and the improvement is great and permanent.

SECT. III.—MANURING.

Yard or Cattle Dung.—This is the principal manure on every farm in every county; the farmer who makes the most and richest, who preserves it best, and applies it oftenest, ensures the greatest reward for all his toil. I am sorry to say, this subject is not sufficiently attended to in Cornwall, neither one quarter part is made that might be, nor is that which is made properly preserved, or judiciously applied; however, the neglect and mismanagement of this essential requisite to good husbandry, must not be entirely attributed to the improvidence of the farmer, but, in some measure, to the want of farm-yards, and of a sufficiency of well-arranged offices for confining, sheltering, and housing cattle.

The only time of raising animal manure is in winter; it is collected from cattle fattening upon turnips and straw, and from oxen, cows, horses, and young cattle, which are housed. The dung of this stock, with that from the pigs'-houses, is thrown promiscuously in heaps and parcels about the town-place; there it lies, exposed to the winter rains, until its essential properties are washed away; what remains is carried and applied, in the spring, in an unmixed state, for potatoes and cabbages—on the fields intended for turnips and wheat, to form a compost with lime and earth, or sand and earth; but here again it too often sustains a further deterioration, from exposure to drying winds and hot suns, before it is mixed with the other ingredients of the compost. Long unfermented dung is preferred by a few farmers for potatoes, assigning the reason, that it keeps the earth light and hollow, thereby allowing a freedom to the roots to run and spread; but the prevailing opinion throughout Cornwall is, that short rotten dung is the best for all purposes, and that such dung applied alone, if sufficient quantity could be had, is the surest method of securing a good crop of turnips. The arable farmer very seldom spares dung for grass land, unless for a small plot appropriated to the use of his cows or calves.

Such is the *general* practice in this branch of rural economy; but let us see what it ought to be, and what I feel much pleasure in stating, is the practice with some intelligent provident agriculturists in this county. With these, the important business of raising animal manures is not confined to the winter months only, but in the latter end of October all cattle are brought home, and when the winter provision of turnips, ruta baga, and cabbages is expended, either tares, early grass, or clover, carry on the stock until the busy season of hay-harvest commences; they are then turned out into the fields. During the time the cattle are stall-feeding and soiling, they are generally tied up in paved houses, or sheds, well littered; every particle of manure is carefully husbanded, by being deposited on rather a hollow scite, in heaps of an oblong form, far from the droppings of the eaves of the buildings, and whatever unavoidably drains from it, is conducted by channels into pits filled with earth, half-rotted straw, or weeds; or conveyed to a pond for the purposes of irrigation—*Nothing is lost.*

The dung is not allowed to accumulate to any considerable heap in the yard, but is, at all opportunities during the winter and spring, carted to the fields for which it is intended, and deposited on collections of earth, in moderate heaps, and these are immediately covered over with a coat of earth, and beat close with the back of the shovel, in order to keep out wind, rain, sun, and air. Thus a too rapid fermentation, and consequent extrication, of the volatile matter is suspended, until the soil be ready to receive it, when it is spread before the plough, and immediately turned in. And here again, as in the collection, so in the preservation and application, *nothing is lost.*

The fatting and store pigs, on these exemplary farms, are confined the whole year, (excepting when they are turned into the stubbles and woods in autumn), to commodious yards and houses, wherein they contribute to the enriching and augmenting the dung-heap; the horses too are stabled throughout the year. The farmer who raises dung six months in the year, does well; but certainly, he who raises it twelve months, will do much better; besides, summer-raised dung is far more valuable than that made during winter. On the whole, it must be admitted, that this essential branch of rural economy is hardly any where sufficiently attended to, and yet how many pithy proverbial incentives have we to impress our minds with its importance? such as, "Manure is the life and soul of husbandry;"—"Muck is the mother of the meal-chest;" with many other appropriate mottos, to excite a sedulous and anxious attention to the *collection*, *preservation*, and *application* of this very necessary article.

The maritime situation of Cornwall presents the farmer with three valuable manures, fish, sea-sand, and ore-weed. We will speak of these respectively. In some years the farmers who live in the vicinity of fishing towns, have an opportunity of buying the bruised and small pilchards; these being deemed unfit for market are rejected, and called "caff;" four cart-loads, of twelve bushels, are considered as the proper quantity for an acre. The usual mode of management is to bury the caff in a pile of earth, deep enough to secure it from dogs and hogs, adding to the pile a sufficient quantity of sand, well mixing and turning all together, after having lain some months. Without this practice, the fish would not decay sufficiently for perhaps a year or two. The fish are sometimes used alone; they are then spread thinly over the ground before the plough, and turned under furrow. I have been told, that one pilchard, cut up small, will amply dress one square foot of ground. They used to be sold for about 9*s*. or 10*s*. a butt-load; they are now risen to 15*s*. or 20*s*. per load. The bruised fish, immediately from the cellar doors, are considered as infinitely preferable to the refuse of the salted fish.

The fishery having of late years been greatly checked, by the failure of the foreign markets, considerable quantities of fish have been converted to manure; but this is to the great loss of the adventurers: if, however, the bounty which has been granted to merchants on the export, was extended to all fish taken by adventurers in seins, and sold for manure, it would enable the proprietors to put out their seins for the express purpose, and thereby both the interest of the fisheries, and the advancement of agriculture, would be greatly promoted; and, it is presumed, that the influence of the Honourable Board would be well employed in obtaining this great national object. The old salt which has been used for curing the pilchard, and judged to be no longer fit for that purpose, is advantageously applied for a barley or a turnip crop,—twenty to thirty bushels per acre. It is commonly hand-sown, in the manner of corn; and it should remain on the land five or six days before the seed is sown. It is best adapted to light lands, particularly furze-crofts.

Twenty bushels per acre have been strewed over grass lands, and over a wheat crop, in the month of March, with evident advantage. The price of this salt used to be sixpence per Winchester bushel, which weighs 84 lb. and is called a *gun*, but cannot be had now under tenpence or one shilling.

Another article of manure is obtained from this useful fish—this is the liquor which drains from it while under the process of curing, consisting of blood, brine, and some oil which escapes, and which is caught in pits; the diligent farmer carts this away in casks, for the purpose of pouring over and mixing with his piles of earth and sand, which it greatly enriches.

Sea-wrack or *Ore-weed.*—Of this there is a great variety on the sea coasts of Cornwall. A particular description of them belongs rather to natural history than to agriculture. I will just mention, that I have met with the species called *lichen marinus*, or laver, at some gentlemen's tables, which, like the olive, is particularly relished by some, while it is loathed by others. Dr. Borlase says, the sheep and black cattle, in the islands of Scilly, feed upon sea-wrack, especially when the other pastures fail; and this they do, eating the plant in its saltest state, from the rock whereon it grows, when the ebbing tide has but just left it. He adds, the inhabitants of these islands make kelp of the algæ; they send it to Bristol, to the glass-manufacturers; but the most general use is for manuring the land, and Cornwall presenting such an extent of coast, this plant offers itself so conveniently, and in so many places, after hard winds, that scarce any industrious farmer on the coast can want this species of manure for his land.

The most approved management of this excellent manure is, to carry it fresh from the shores, and spread it on heaps of earth, then to cover it with sand; after lying in this state some time, it is completely incorporated,

porated, by turning and mixing it with the other ingredients, which make together a rich compost. If the wrack is suffered to lie in a heap by itself, it heats, and becomes so extremely putrid, as to attract flies, and generate maggots.

Some farmers carry the plant alone, in small heaps, over a field they intend for barley, spread it, and turn it immediately under furrow; for if they are not diligent and cautious in this work, the sun and the wind exhale its rich moisture; it shrinks almost to one half, and is then little worth.

Sea-Sand.—Here is another inestimable treasure which Cornwall derives from her great extent of sea coast. Long experience has proved, that sea-sand is a fertilizer of the soil; good for corn, causing it to kern, or corn well, as well as for pulse and roots, and excellent for pasture. It is in such estimation with farmers, as materially to affect the value of estates, according to their nearness to, or distance from, this manure. It is frequently carried fifteen miles inland. Cornwall has perhaps a greater variety of shelly sands than any other county in Great Britain: Dr. Borlase enumerates thirty-two different kinds. It is in greater plenty, and, in general, of superior quality on the north coast than on the south; but there are very few places where one kind or other may not be had.

The relative degrees of the fertilizing powers of sea-sand depend on the different proportions of calcareous and animal matter of which it is composed; but its effects on soils are mechanical, as well as chemical. There is indeed mixed with some sand, a slimy earthy matter, the recrement of leaves, wood, and perhaps animal remains; this, I believe, is what they call *lig*, or *liggan*, and has been found to be a good manure for potatoes. That sand which is in highest estimation is taken up about Falmouth Harbour, in Carrick Road; it is a coral sand, and of large size, effervesces strongly with acids, and lies longer in the ground, in an undissolved state, than any other. This sand is much in use about Truro, Probus, and the vicinity. There is also a much finer sand taken up at the mouth of the harbour, less calcareous, and less in request. All along the north coast, from the Land's-End to Bude Haven, the sands are very good, containing a large proportion of shelly-fragments.

Application.—When sea-sand is applied alone as a dressing, which is sometimes the case, both on grass and arable lands, they call it a clean sanding; but the most usual method is, to mix it in the compost with earth and dung. The quantity used per acre will depend on the ability of the farmer, and the distance he has to carry it. Three hundred sacks, of sixteen gallons each, is deemed a good sanding for a Cornish acre, and it is applied in all the intermediate quantities, even down to thirty sacks.

The quantity necessary to ensure a good crop depends upon the soil. On the moor lands, and also on some of the growan soils, thirty sacks will have more immediate effect than thirty cart-loads will have on a deep loamy soil; and the same may be said of lime. In steep situations it is carried on horses, mules, and asses backs, in sacks, or dung-pots; the burthen for one animal is called a *seam*, weighing about 200 cwt. each seam; but the general carriage for land is the butt, or cart, containing the quantity of twelve sacks, and drawn by oxen and horses.

It is computed, that upwards of 54,000 cart-loads of sand are carried from Padstow harbour only, and that the expense of land-carriage of sand, for the whole county, amounts to upwards of 30,000*l.* per annum. In many parts of Cornwall, the schistus, or slaty rock, which forms the substratum, is of an argillaceous, unctuous, soapy nature; they plough this up in some places with a strong plough, and, after exposing it to summer suns and winter frosts, mix lime, or sand, with it; by which management it becomes an excellent thickener and fertilizer of thin, exhausted, worn-out soils.

Marl.—In my perambulations, I enquired and sought for this species of manure; and in the parishes of Gwinear, Feock, St. Allen's, and Mullion, was shewn a brown or yellow ochreous earth, which is slightly cohesive, and becomes friable upon exposure to the atmosphere, breaking and crumbling into gritty particles; it greedily absorbs water, but does not effervesce with any acid: among its constituent parts there is a large quantity of yellow mica, which make it glisten like gold; and a farmer, who tried it as a manure, found it so extremely fertilizing, that he called it his gold dust. Mr. Sickler, of Gwinear, greatly improved his estate by an application of this fossil earth. On the farm at Trelesic, in Feock, it has been long used as a manure for crops, as well as for garden dressing; here is found the best specimen of this earth.

Lime.—The only places where limestone is found in Cornwall, and burnt for manure, are in the parishes of South Petherwin and Veryan; the former is an old work, and, about half a century ago, the lime was much used in the neighbourhood of Launceston; it is still carried on.

The Veryan limestone was discovered on the lands of the Rev. Mr. Trist, in 1796, and has been wrought by him ever since, both for manure and masonry. A good specimen of this stone, yielding about nine-tenths of lime, the component parts being $89\frac{1}{8}$ grs. pure limestone, ten silex mixed with manganese, $\frac{7}{8}$ grs. calx of iron per cent. The two latter ingredients, it is thought, give it that strong character for cement which it is known to possess, and in which it seems to resemble that species of limestone described by Professor Tharrup, in his Essay on the General Economy of Denmark. "There is found (he says) in the isle of Bornholm another kind of limestone, in which the lime seems to be impregnated with *manganese*, and to which the people of the country give the name of *cement stone*; when burnt and mixed with lime, it affords a cement greatly preferable to any other of which the use is known in Denmark."

The Veryan limestone runs in strata of from two to three feet thick, in the direction north and south, appearing at the surface, but is not worked to its depth, the thin lode not paying for the removal of much superincumbent matter. However, the strata appear in masses in the adjoining cliffs, at Pendower, whence they are taken with great ease. Of this stone, a ton weight will produce nearly twenty single Winchester bushels of shells, or fore-right lime; to calcine which, are required four bushels and a half of culm.

Along the eastern coast of this county, the Plymouth, or Catdown, limestone alone is burnt, and sold by the double Winchester of 150lb. weight. Of this stone fourteen tons and a half will produce one hundred of such bushels, taking three quarters and a half, or fifty-six Winchester (single) bushels to calcine the same; whereas forty-six Winchester bushels of culm will produce 200 single Winchesters of well-burnt lime, from eleven ton of the Veryan stone. Where the Cornish lime has been tried as a manure with the Plymouth stone, there does not appear to be any difference in the produce.—*J. T.*'

The only real *marl* I have met with, that is, such as will freely effervesce with acids indicating the presence of lime, was in the neighbourhood of the above lime-works.

Bones.—In a field, on the interesting farm of Mr. Gwatkin, is a slip of land of fifteen yards, which still shews the effect of this species of manure, though applied eleven years ago; and so sweet is the herbage, that the cattle hang upon it as long as they can find a blade of grass. The quantity was about twenty-four Winchester bushels; they were covered with quick-lime, that they might be more easily broken, and, as soon as the lime became effete, the bones were picked out, which, though retaining their form, were reduced easily to powder by the hammer, and in this state were spread thinly by hand.

Gypsum.—Prepared gypsum has been tried in some few instances, but no good effects have been produced to encourage a repetition.

Ashes.—Turf, wood-ashes, and coal-ashes are used for grass lands; the first are sometimes sown by hand over a thin crop of barley in the spring, but ashes of any kind ought to be kept dry, or they are little worth. A method of raising manure, peculiar to Cornwall and Devon, deserves notice; it is the strewing of refuse straw on the roads and lanes adjacent to the farms; here, after it has collected much matter from passing cattle, and the road soil, (which is particularly good in those districts where the schistus, or dunstone, is used to repair the roads), it is then scraped up into heaps on the sides of the roads, and there remains until the seasons approach for the wheat and turnip tillages.

SECT. IV.—IRRIGATION.

The county of Cornwall, almost every where presents a surface well adapted to this greatest and cheapest of all improvements. Almost every farm is by nature thrown into slopes and declivities, and very few are deficient in wholesome fertilizing springs and rivulets. Most of the soils are calculated to receive very beneficial effects from this mode of improvement; the declivities of the grounds favour that nimbleness of the current required, and the porous shelfy substrata allow of their being quickly laid dry. These local advantages are not overlooked nor neglected; a great many intelligent spirited agriculturists adopt the practice of irrigation, which may be said to be already extensive, and is still extending. But water being pure and limpid to the eye, the undiscerning farmer can hardly be persuaded that it is impregnated with various fertilizing matters. Let him, however, view the rich verdant stripes on the sides of hills, where springs spontaneously overflow; or, after attending to actual experiments, which the county exhibits, in several parts, let him make a fair and judicious trial of the application of water over his own ground, and he will have convincing proofs of its often containing powers of wonderful fertility. Its certain effect in counteracting the backwardness of the climate, and producing early spring food for ewes and lambs, should alone be a powerful inducement to the farmer to set a high value upon this gratuitous source of manure.

It must not be suppressed, that other causes exist in Cornwall besides prejudice, which operate in preventing farmers from adopting this mode of improvement more extensively; mills, and intermixed property, are no easy obstacles to overcome. Again, some streams are poisoned by the miners washing tin-ore in them, thereby impregnating them with mundic, and other substances injurious to vegetation; but the quality of any water may be easily and cheaply ascertained, by watering a small piece of land first, as an experiment. Should prejudice, or ignorance, still allow the wholesome springs and rivulets, which are so bounteously distributed throughout this county, to glide away, slighted and neglected, into the sea, surely the farmer will not fail to take advantage of those brooks which have been swollen into rapid torrents by the autumnal and winter rains; these being charged and thickened with the soils from the arable, manured, hilly grounds, and enriched with the washings of roads, town-places, farm-yards, and villages, must claim the farmer's particular care and attention; and every method will be resorted to by him for conducting them over the adjoining grass lands, or for arresting and collecting them, in a succession of catch-pits, in which their rich floating matters may be deposited.

On the farm which I rented, a field, from its poverty,

verty, called *Poor-park*, after it had been watered by spring and pond water, became a truly rich meadow. When I first commenced this mode of improving land I fell into an error, by turning the water over a field near the homestead; but considering that this field lay conveniently for manuring, I carried my water afterwards over a distant out-field. Another error was, that, not having duly proportioned the land to the quantity of water I could command, I at first distributed over ten acres what I afterwards confined to four, for which I had thus always a sufficient quantity. It is with real pleasure that I see a premium of ten guineas, adjudged this year, 1808, by the Cornwall Agricultural Society, to Mr. Trood, of Poughill, for the best watered meadow.

This meadow, a poor moory soil upon a bluish clay, was of little value, by means of stagnant water. Mr. Trood hollow-drained, and floated part of it with the water which came from the drains; he commenced the operation of floating in November, and continued it until March; then laid it dry, and, after feeding it with sheep and bullocks until the close of April, shut it up for hay, of which he cut the following June, he thinks, one ton and a half per acre. The field is five acres; I walked over it in September, 1807; there was then a full bite for bullocks, after having been fed a fortnight. The expense of this improvement was about 10*s*. per acre, and the increased value full 40*s*. per acre.

I have always thought myself well employed when detailing facts, and observations minutely registered, in the progress of any peculiar experiments. I was much gratified at seeing, in the last week in February, 1808, at the Rev. Mr. Trist's, of Veryan, on a meadow not two acres, and but recently improved by irrigation,

forty

forty couple of ewe and lamb feeding and reposing in the richest pasture. The following are the notices of this improvement communicated to the Surveyor:—"Meadow first irrigated November, 1805; not fed before cutting; mowed May 19, 1806.—Had the weather permitted we might have cut ten days sooner; after much tending, carried, on the 23d, five stout load, of 18 cwt. each; not a drop of rain had fallen on it. The after-grass kept more stock of yearlings than I could have supposed through July, August, and September.—Began watering about the middle of October.

"1807. March 12th, stocked with thirty couple of ewe and lamb, continuing them with a free resort to a bare field of three acres to lodge, and, after their removal, other cattle till the 10th of April; then watered and cut, on the 16th of June, a full shred, near five loads, and carried on the 22d, in good order; the quality certainly better. Full of grass and stock through August, and part of September; water laid on September 22.

"1808. February 22d, stocked with forty couple of ewe and lamb, in a fine floor of the richest pasture; nothing could exceed the rapid growth which followed this depasturing with sheep. June 18th, cut a very heavy crop of grass, which would have been taken down a week or ten days before, had the weather permitted, as water meadow-grass grows flaggy and coarser every hour after it drops and lodges. The after-grass was abundant.

An adjoining plot, about half an acre, was so full of weeds in April, 1806, that I intended breaking it up to cleanse it, in order for future watering; but, on better advice, I turned the stream upon it the 12th of April, in its foul state, and cut, on the 18th of the following June, two stout load of hay, coarse but useful: this plot has been improving ever since, the water having, in great measure, destroyed the weeds, and totally altered the floor, by filling up the pits and encouraging better grasses. The result of my experience is, that, where the water is good, water-meadows should be stocked with sheep before the growth is six inches high, and fed till the middle or latter end of April, and the farmer may expect to cut hay before Midsummer; that they should be cut as soon as ever the grass tends to lodge, either by rain or dews; that in all cases close feeding improves the quality; that the flock should not lodge on the tender ground, but be driven to some adjoining field; that a moderate rush of water is preferable to equal slow irrigation; and that the farmer need not delay, nor be deterred from, laying his lands under water, on the notion that they require expensive preparation by levelling and cleansing, since, if the water is good and plentiful, it will, by attention, gradually fill up little inequalities, and the weeds will give place to a more generous pasture. No doubt, if a man has time before him to cleanse and lay down his lands, an operation of perhaps four or five years, the improvement will be greater; but such is the speedy advantage from irrigation, that I have hazarded the above opinion, as no time should be lost wherever the farmer can turn a fertilizing stream over his lands."—*J. T.*

The method of watering meadows, both in Cornwall and Devonshire, used to be by level gutters; this practice has given way to gutters of quick descent, with stops at intervals, to throw the water over the land wherever it is required.

SECT. V.—WEEDING.

It were to be wished that the farmer would consider these invaders of his property, and usurpers of the soil, in a more inimical light; most assuredly they operate as a very heavy tax upon his manure, and a vast drawback on his crops. It avails little partially to destroy them in his fields, while he blindly allows them to grow, and propagate a hundredfold in his hedges and lanes; they should certainly be rooted out annually from these prolific nurseries. But if we will not use all the means of destroying them, let us avoid disseminating them, by that too common custom of winnowing corn in the fields.

The practice of weeding corn crops is general throughout this county; potatoes are hoed by all, and turnips by many; the necessity of this is pressing and annual, but the labour of weeding would certainly be much less were proper precautions taken. I should indeed consider a farm weed-free, to be equivalent to its being tithe-free; nay, taking into account the heavy expense of weeding, the diminution and deterioration of crops, perhaps the loss is in some cases, equal to the rent.

CHAP. XIII.

LIVE STOCK.

SECT. I.—CATTLE.

THE celebrated Mr. Bakewell many years ago visited this county, and candidly observed to Sir Harry Trelawny, who had introduced some of the Dishly breed, that he had no occasion to send so far for neat cattle, while he could have so good as Devonshire produced; and this breed, more or less pure, prevails throughout Cornwall. But it is only among the more enlightened and spirited breeders, that the genuine North Devon are to be met with.

In my enquiries, I have heard objections against them; such as being too fine, that they are not hardy enough, and that their strength is not in proportion to their activity. The several shades and gradations of form and colour, may arise from their partaking more or less of the South Devon breed, which is not so fine in bone, nor so light in offal; the latter are more of a brown, than of a blood-red colour, and this mixture is considered stronger and more hardy. But taking into account the great diversity of soil which prevails in Cornwall, as well as difference of situation in regard to shelter and exposure, it is not to be wondered at, that the cattle which are bred and fed thereon, should also vary much in size and other properties, occasioned by local circumstances.

The markets in the different districts have also some influence in governing the size of cattle, large meat not being so saleable as smaller. A bullock of from three to five hundred weight, is more marketable than one of eight or nine hundred weight. The larger breed of cattle, of which there are great numbers in Cornwall, are annually sold to graziers and contractors; to the former, in store state, to be driven into Somersetshire, or other grazing counties; and to the latter, when fattened on turnips or summer grass, to be slaughtered at Plymouth for the Navy.

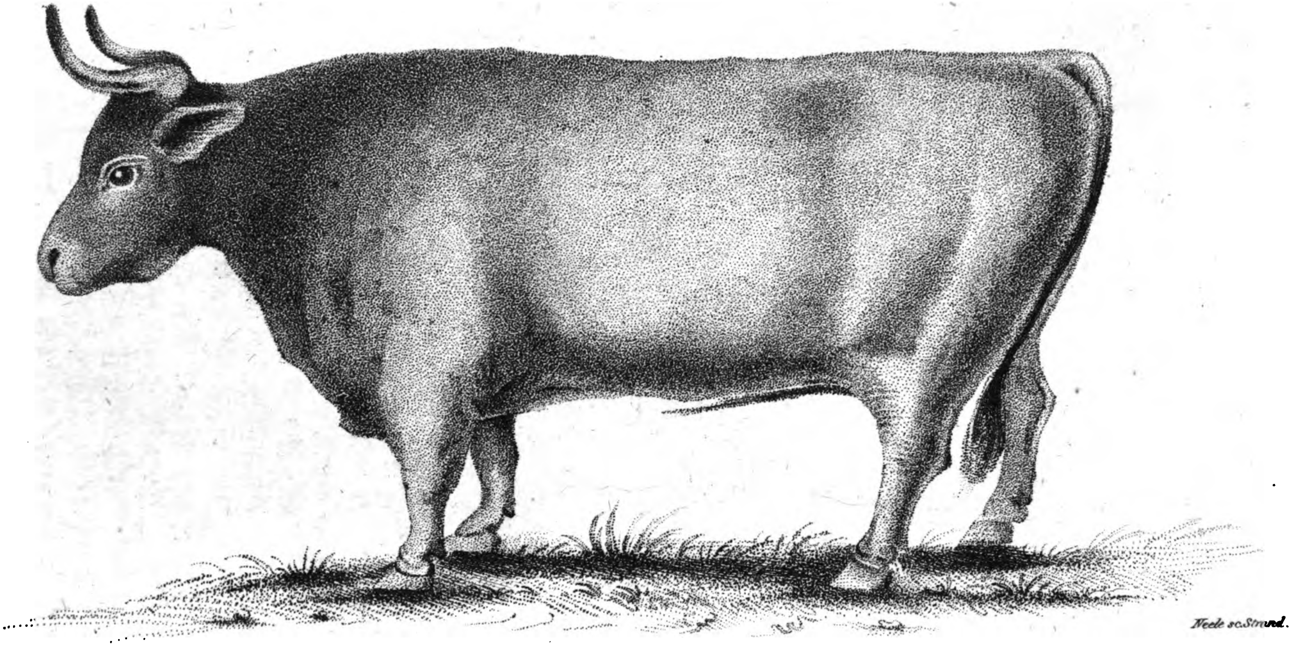
There are many fine models of these animals dispersed over different parts of Cornwall. Among those I examined, Lord Falmouth's bull in every point is equal, if not superior to most, and obtained the first premium at this year's (1808) Annual Exhibition.

Mr. J. P. Peters, of Creegmurrion, to whom the county is indebted for his various and excellent exhibitions of cattle and sheep at the different meetings of the Cornwall Agricultural Society, and who has not been equalled in either zeal or success by any competitor, obtained the first prize in the year 1806, for a noble animal of the North Devon breed.

The Rev. H. H. Tremayne has, perhaps, the most perfect animal of the North Devon breed that has ever been exhibited in this county, and was honoured with the first prize in 1809. *Near Right*, a bull purchased of Mr. Savery of Devonshire, by the Rev. R. Walker, merits his name, from the due proportion and symmetry of his shape. (See *Plate* X.)

Messrs. Jefferies and Pike, in the Eastern District, have excellent bulls of Mr. Savery's breed; indeed, were it necessary, I could give a long list of emulous breeders, and it would puzzle very able judges to decide which

(A Devon Bull;
named Near-right the property of The Revd. Rt. Walker:)



Neele sc. Strand.

they tell you, in homestead plainness, "they won't do here;" and to argue with them, would be taking the bull by the horns.

The late Lord Elliot introduced, some years ago, a large long-horned breed from Gloucestershire; some of them yet remain about St. Germans.

I have met with some Irish and Scotch cattle; the former are remarkable for thickness of hide, bad provers, and coarse flesh; the Scotch thrive well, and make excellent beef.

The native cattle of Cornwall are very small, of a black colour, short horned, coarse-boned, and large offal; very hardy. There are certainly cattle now, in different parts of the county, which partake of the above qualities. I have met with black cows and bulls of a small size, weighing perhaps from three to four hundred.

COWS.

It has been already stated, that the dairy does not constitute a very important department in the husbandry of Cornwall. The cows appropriated to this use, are mostly of the Cornish or Devon breeds; there are also many Jersey and Guernsey cows, their milk yielding a cream of a richer colour and quality.

My intelligent informant, Mr. Sickler, tells me, that in the western part of the county, from the river Hayle to the Land's End, the greater part of the high land is appropriated to the keeping of cows; the soil is the black growan, the farms from 20 to 60 acres of grass land, with large portions of waste, which are called crofts; these crofts are kept up all the summer for the cows, into which they are not turned till about the first week in November, and remain there until about three

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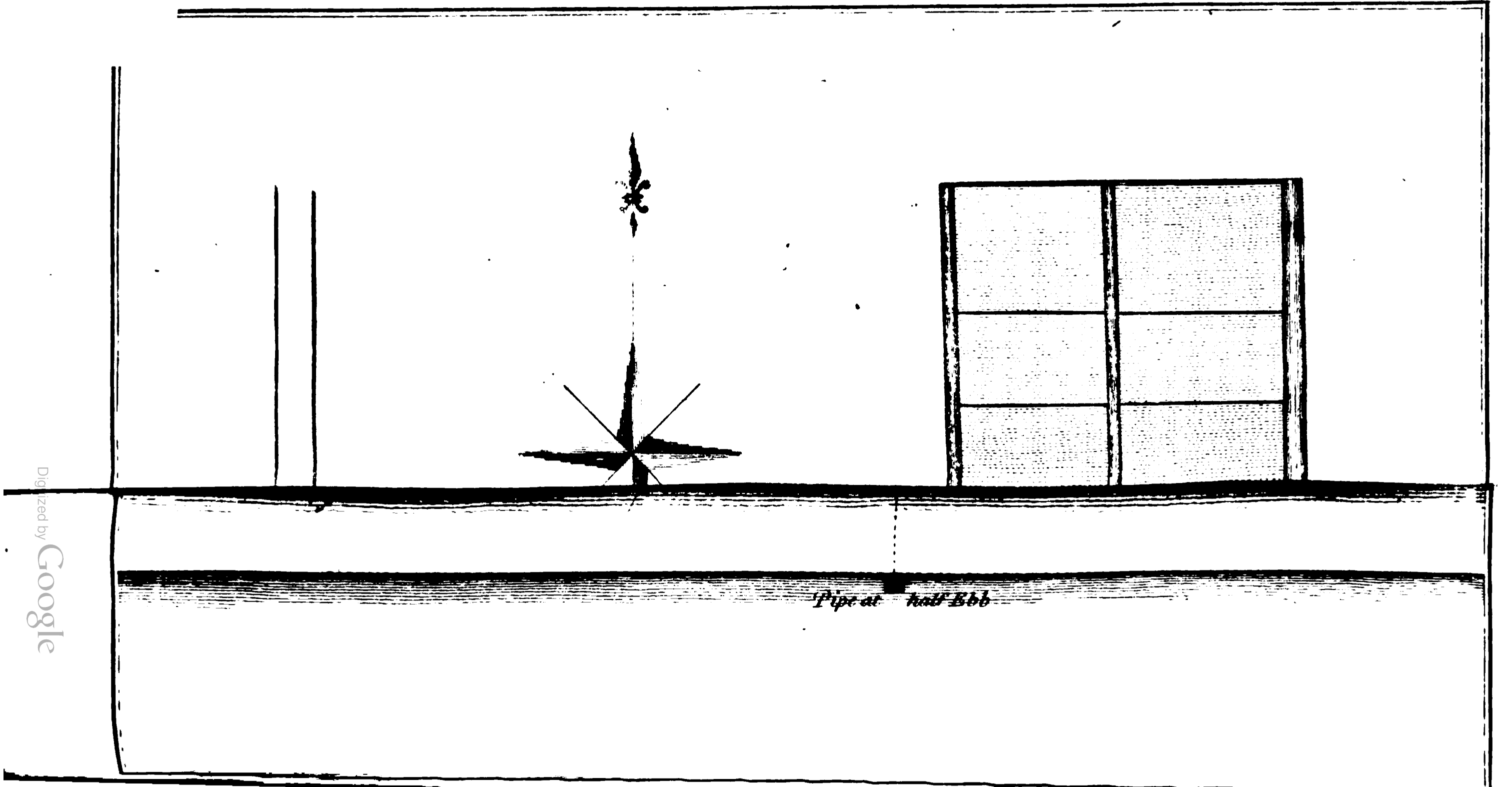
Plate IX. Page 241.



three weeks before they calve, when they are brought to the fields, which having been kept up, are now full of grass: this feed, with an oaten sheaf now and then, serve to raise their milk; but they have no other dry meat, nor turnips through the winter, while in the crofts; the grass there being plenty and of good quality.

The farmers whose property these cows are, and who also keep them in the above manner, have nothing to do with their produce excepting the calf; for should a farmer possess twenty cows, he lets them, nearly all out, to labourers and poor people, at 6*l.* or 8*l.* per cow, for seven or eight months; four, six, eight, or ten cows to each person. The hirer pays his cow-rent by milk and butter, for which he finds a ready market and sale in this populous district. When a cow approaches her time of calving, the farmer is obliged to take her, and provide the person with another, flush in milk. These cow-renters generally have a piece of ground allotted them by the farmer, on which they grow potatoes; with these, and with the scalded milk which has yielded cream for the butter, they fatten a great many young porkers.

In the eastern part of Cornwall all farmers keep a few cows, the produce of which is appropriated to the rearing of calves, making butter, and feeding pigs. Very little cheese is made in the county.

I could mention some individuals of this class of animals, remarkable for their extraordinary produce of milk and butter, did I not consider the detail of such qualities more tedious than useful. We will pass on then, to the process for making the *clotted* or *clouted cream*, by scalding the milk, so famous and peculiar to Devonshire and this county. It is simply this: the milk while warm from the cow is strained into either large shallow brass-pans well tinned, or earthen ones, holding from two to five gallons, in which should be a small quantity of cold water; this is thought to prevent the milk from burning, and to cause the cream to be more completely separated and thrown to the top.

The morning meal of milk stands till about the middle of the day, the evening meal until the next morning: the pans are now steadily carried to, and placed over a clear slow fire; if of charcoal, or over a stove, the cream is not so apt to get an earthy or smoky taste, as when the milk is scalded over a turf or wood fire: the heat should be so managed, as not to suffer the milk to boil, or (as they provincially term it), to heave; as this would much injure the cream. The criterion of its being sufficiently scalded is a very nice point: the earthen pan, having its bottom much smaller than the top, allows this point to be more easily ascertained; because, when the milk is sufficiently scalded, the pan throws up the form of its bottom on the surface of the cream.

The brass pan being almost as big at bottom as at the top, gives no criterion to judge by; but the appearance and texture of the surface of the cream, the wrinkles upon which become smaller, and the texture somewhat leathery. In summer, it must be observed, the process of scalding ought to be quicker than in the winter, as in very hot weather, if the milk should be kept over too slow a fire, it would be apt to run or curdle.

This process being finished, the pans are carefully returned to the dairy; and should it be the summer season, they are placed in the coolest situation; if on stone floors or slate benches, the better; but should it be the winter season, the heat should rather be retained, by putting a slight covering over the pans, as cooling too suddenly causes the cream to be thin, and consequently to yield less butter; the process for the making of which we now come to.

The cream of the milk, in hot weather, should be made into butter the next day; but in winter it is thought better to let the cream remain one day longer on the milk. The cream being collected from the pans, is put into wooden bowls, which should first be rinsed with scalding, then with cold water; it is now briskly stirred round one way, with a nicely cleaned hand, which must also have been washed in hot, then in cold water; for these alternate warm and cold ablutions of bowl and hand, are not only for the sake of cleanliness, but to prevent the butter from sticking to either.

The cream, being thus agitated, quickly assumes the consistence of butter, the milky part now readily separates, and being poured off, the butter is washed and pressed in several cold waters, a little salt is added to season it, and then it is well beaten on a wooden trencher, until all the milky and watery parts are entirely separated, when it is formed into prints of sixteen or eighteen ounces, for the markets.

It is worth remarking, that this process of scalding milk is in some degree a remedy for that disagreeable taste which is occasioned by cows feeding on turnips or cabbages.

Rearing of Calves.—Nothing particular or singular has occurred in this department. From December until April, or beyond, this business goes on; they remain with the cow two or three days, are then fed from the pail with new milk, about ten or fourteen days, then with scalded milk; some mix therewith a little hay-tea, others a porridge of boiled potatoes, oaten meal, or wheaten flour; they are kept in pens in the corner of a stable or shed, until the season will admit of their being turned out into a little meadow near the homestead, where the pail is still continued for some time once or twice a day.

Plans of Linneys for Cows, by Capt. V. Penrose, (*see Plate* XI.)

Fig. 1. *Plan of a Linney for Seven Milch Cows.*

a, cribs for hay or straw in winter, and lucern, vetches, &c. in summer.

b, troughs for turnips, potatoes, cabbages, &c.

c, beds or platforms for the cows to stand and lie on.

d, gutters sunk two or three inches to receive the dung.

e, head-way and feeding place.

f, dark place for vealing a calf.

The division outside the vealing place is for a cow that has, or is near having calf. She is not tied up.

Fig. 2. *A Linney for Young Cattle.*

a, three years old. *b*, two years old. *c*, one year old.

This is on the same principles as *Fig.* 1; but I put divisions, that the younger beasts may not get injured by running amongst the others. The head-ways are shortened in proportion to the size of each year's growth, so that they all dung in the same gutter, *d*.

Fig. 3,

Fig. 2.

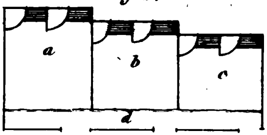


Fig. 4.

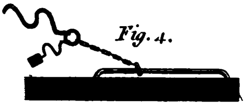


Fig. 1.

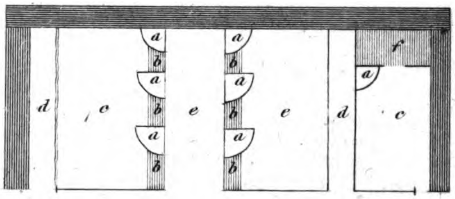


Fig. 3.

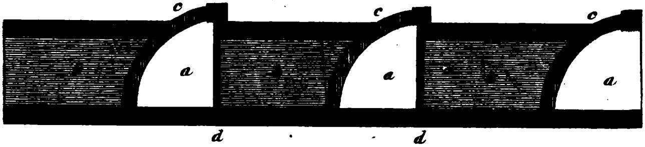
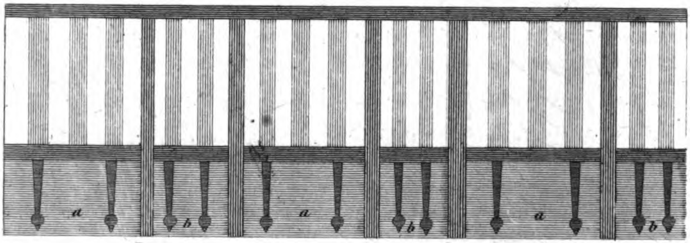
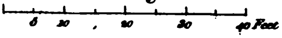


Fig. 5.



Scale for Figs 1 & 2



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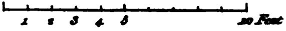

Neele sc. Strand

Fig. 3, shews the Cribs and Troughs of the Cows' Linney, on a larger scale.

a, cribs. *b*, troughs.

The upright square posts shaded dark, are of oak, about three inches and a quarter stuff, and are firmly fixed in the ground. The curved pieces at the top and bottom of each end, are also of oak.

c, posts, to which the cows are tied by means of a long staple, on which runs a ring with a short chain and rope, as represented in *Fig.* 4, which is the elevation of the post.

If it be necessary to give support to a roof or floor above, the posts *d d*, must be carried up for that purpose. The upright board of the troughs next the cows, is nine inches high, the back eighteen inches. The small round marks shew the number of bars in each crib.

Fig. 5. *The Elevation of the Backs of the Cribs and Troughs, towards the Feeding-place.*

a, backs of the troughs made to lift up on hinges, for the purpose of cleaning them out.

b, boards to lift up on hinges, to clean out the bottom of the cribs.

The bars above the troughs, are to keep the cows from putting their heads through into the feeding-place.

The bars above the door *b*, are the backs of the cribs.

The side of each crib towards the trough of the next cow, is boarded up.

WORKING OXEN.

In no county does the ox stand in higher estimation for all kinds of work, than in Cornwall. Oxen are every where to be met with, drawing the butt, the wain, and the waggon, on the roads; in the fields, the plough and the harrow. They are brought to the yoke and bow, at about the age of three years, and worked to the seventh or eighth year; they are shod, or, as it is provincially termed, *cued*, are extremely docile and active, going at a full trot with the empty carriages in the bustling seasons of hay-time and harvest, and driven by a little boy, who chears and excites them in their labour by the song and the goad: bulls in some few places are worked with oxen. A plough team generally consists of four, some of six, or of four with a horse to lead.

Brakes, or machines for shoeing oxen, are becoming pretty general in Cornwall; there having happened, from casting them, many accidents, which this contrivance is well calculated to prevent.

The two or three year old lays are appropriated to the summer run of one and two year old cattle, and the working oxen; but much of the young store stock of farmers who occupy farms in the vicinity of the moors commons, and crofts, are sent thither about May, and remain until October. The fattening cattle of different descriptions, and the milch cows, are put in the meadow ground, new lays, and second crops of clover.

In the winter, excepting when the weather is very severe, which is seldom the case in Cornwall, the stock are seen ranging the fields, the adjacent coarse wastes, or straying in the lanes, after having eaten a straw breakfast, either under a shed or a lee hedge; which repast is repeated in the evening for supper.

The milch cows are in the best grass by day, and are pretty generally housed by night; when they get a little oaten or wheaten straw, or inferior hay.

Gentlemen, and some superior farmers, house all their cattle, giving their cows cabbage, rape, or the tops of turnips, and ruta baga, with straw or hay; the young cattle too, get a few turnips with their straw. The working oxen in most parts of the county are also housed from November till May, kept upon straw, and when worked have a little hay. Cows and heifers in calf are usually indulged with a more generous keep about a month before they calve. But under this head it must be observed, that from the general deficiency of house-room and comfortable farm-yards throughout the county, as also of more extensive winter green crops, all cattle, particularly young stock, sustain much injury for want of more generous food, and, what is almost equal to it, warm shelter; but the evil by no means stops here, for not one quarter of the dung is raised that might be, and a long train of evils followed from this deficiency.

The cattle of Cornwall are in general very healthy, and it is well that they are so, as I have heard of no very skilful farriers. There is a disease, which, if a remedy is not immediately applied, very soon kills the animal; it is here called the *head-flay*. The head suddenly swells to an enormous size; in this case, two deep incisions made under the tongue, and filled with salt, effect a cure almost immediately.

SECT. II.—SHEEP.

Mr. Carew, in his Survey of Cornwall, published in 1602, says, "The sheep had generally little bodies, and coarse fleeces, so as their wool bare no better name than Cornish hair, and hath from all ancientry been transported without paying custom." Curiosity induced me to see what they still call the true Cornish breed of sheep: the animals pointed out to me as such, have grey faces and legs, coarse short thick necks, stand lower before than behind, narrow backs, flattish sides, a fleece of coarse wool, weighing about two or three pounds, of eighteen ounces; and their mutton seldom fat—from eight to ten pounds per quarter.

From the various crosses which have been made by rams, introduced at different periods into Cornwall, of the Exmoor, Dartmoor, North and South Devon, Dorset, Gloucester, and Leicester sorts, a pure Cornish sheep is now a rare animal, nor, from its properties, need the total extinction be lamented.

Waving the question as to all nice discriminations of particular breeds, and taking a general view of the subject, it may with truth be asserted, that Cornwall can now boast of as fine flocks of sheep as any county, either as to form, weight of fleece, hardiness of constitution, aptitude to fatten quickly at an early age, or flavour of mutton. With respect to their wool, it is a pretty general opinion, that the climate and soil of Cornwall is particularly favourable to the production of the finest fleeces; but from the want of a wool-fair in the county, and from the wool-dealers giving no better price for fine than for coarse wools, the object of the wool-growers has been weight, and not fineness of the fleece; for this reason, the gentlemen of the county are now attempting to establish a wool-fair.

The New Leicester breed of sheep were introduced into Cornwall many years since; but though they have strenuous advocates, it is still doubted by some respectable farmers, whether sufficient advantages have been derived by their introduction. The objections that have been stated to me are the following:—That the stock produced by the cross is deficient in wool, particularly under the belly; that they are too tender for the wetness of the climate, lamb with difficulty, and are bad nurses; they are also liable to the foot-rot. Many butchers affect to cry them down, saying, they lay on their fat too much on the outside, and do not tallow well; but this is only a butcher's objection.

Those who entertain any of these objections proceed very cautiously, and some, after having tried them, have rejected them altogether. But a few examples will be more to the purpose. Mr. Tinney, in the north-east part of Cornwall, prefers a pure Bampton* ewe, crossed by genuine Leicester; and nearer than this Mr. Tinney wishes not to come: the wethers at two-years old of this cross will shear 10 lb. of unwashed wool, and weigh from 25 to 30 lb. per quarter. Mr. J. Shearm, of Stow, breeds from North Devon ewes, a pure Leicester ram; thinks nearer than this too tender: fleece 7 lb.—25 lb. to 35 lb. per quarter. Mr. Trood, of Poughill, from a North Devon ewe and pure Leicester ram; fleece 6 lb.—25 to 30 lb. per quarter. Mr. Bray, from a Somerset ewe, crossed by a ram one-sixth Leicester, improves the shape and disposition to fatten, but rather diminishes the wool. Mr. Paynter breeds from a pure Gloucester ewe, crossed by a Leicester ram; fleece of this stock 7 to 8 lb. and mutton 25 to 30 lb. per quarter. Mr. Kendal, of Padstow, from a North Devon ewe, crossed by a Gloucester ram; fleece about 8 lb.; mutton 25 lb. to 30 lb. per quarter. Mr. J. Robarts, of Newlyn, the ewe, two-thirds Leicester, crosses by a pure Leicester ram; fleece about 8 lb. of good quality. Mr. Robarts fattens the wethers of this stock, and sells them when only eighteen mouths old, after taking their fleece; weight 20 to 22 lb. per quarter. Mr. Robarts has a high opinion of the Leicester breed; he has procured this year twenty genuine Leicester ewes, and the closer the breed the more mutton his land produces.

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* A large sort of sheep in Devonshire.

Some flocks of the Dorset were brought into this county thirty or forty years ago; and at Boconnoc, and a few other places, were long in great favour; they have now given way to the modern improvements: a faint lineament of this breed may be observed in many of the sheep that range the downs. Only two breeds of sheep, distinct and of pure blood, have been observed by the Surveyor in this county, the Leicester and the South Down. The Rev. R. Walker, of St. Winnow, and R. L. Gwatkin, Esq. of Killiow, prefer, and endeavour to preserve entire and unmixed, the Leicester; these gentlemen have hired a ram from Leicestershire, and now hire Leicester rams of Mr. Savery, of Devonshire, at the price of ten guineas per annum for sixty ewes, under a restriction to castrate the males. Many others in the county deal also with Mr. Savery on these terms. There is a flock of pure South Downs at Tehidy Park, the seat of Lord De Dunstanville; also at Tregothnan, the seat of Lord Falmouth. At Duporth, the seat of Charles Rashleigh, Esq. the introduction of this breed is checked by their carrying a small quantity of wool, though fine; but a wool-fair will soon remove this objection, and encourage the wool-grower to pay attention to the quality, as well as the quantity, of this staple commodity.

The Rev. R. Walker has lately bought a South Down flock, and is attentively comparing them with his fine flock of Leicesters. He has also, with the same object and intent, brought down from Somersetshire a genuine Merino ram, with twenty ewes, bred from Ryeland ewes and Merino rams, by the late Mr. Anderton, near Taunton.

The mongrel flocks that live upon the downs, heaths, and moors of this county, summer and winter, are a hardy race, weighing about 10 or 12 lbs. per quarter; the mutton very good; bearing fleeces from 2 lb. to 4 lb. each, of moderate quality; some have horns: they are not nice in feeding, for I have seen them cropping the furze and the heath, as well as depasturing the grasses; they are as active as deer, and if they cannot leap over a fence, they will contrive to creep through it; so that they are a great nuisance to the enclosures in the neighbourhood of the commons, particularly when they have got the shab, or scab, with which these flocks are frequently affected. It is much to be lamented, that the Act of Parliament provided in this case is not oftener enforced.

On the towans, or sand-hillocks upon some parts of the north coast, Peran-Sand, Gwythian, Phillack, and Sennan-Green, they have a small compact sheep, the mutton of which is of a peculiarly superior flavour, weighing about eight pounds per quarter; the fleece is of finer wool, approaching the quality of South Down; the fleece may weigh two or three pounds. The grass of the towans is of a short sweet nature; but in the mornings and evenings innumerable small turbinated snails come out from the sand, on which these sheep seem to make a delicious repast, and on which it is said they get fat. I saw them myself eating these snails.

Fold.—Very little folding: certainly nothing worth mentioning, in the practice.

Food.—Many farmers who have a right of common, or downs, keep their store-sheep thereon in summer, and, excepting in extraordinary hard weather, in the winter too. The best sheep, ewes and lambs, are changed upon the grasses and lays, in the enclosures. Many sheep are fatted on turnips during the winter, carried to them in the lay-fields; some attentive farmers give their ewes a few turnips a fortnight before they lamb, and continue this food till the spring-grass comes; very few indeed take advantage of that excellent resource for spring support, *rouen*, or old grass; a little hay is sometimes given in time of snow, but this practice is uncommon.

Breeding and Rearing.—The ram is put with the ewes from the first of August, through October, according to the season at which the farmer would wish his lambs to drop; and, with the view to twin-lambs, the farmer endeavours to have the ewes in tolerable condition at the time the male is admitted among them. During their time of gestation their keep is very moderate, until two or three weeks before parturition may be expected; they then, as I have said, are indulged with better keep, for the sake of a good udder of milk for the lambs. Sheep are not washed in this county:

early in the spring their tails are trimmed, to keep them clean; and some use a composition of brimstone, oil of tar, and the essential oil of amber, coloured with red ochre, to keep off the fly; but it has not always that happy effect. Sheep are shorn from the beginning of May, through June, being guided by the weather and the attack of the fly. Those shorn early should be housed a few nights. The Agricultural Society has excited much emulation among shearers, by holding out premiums to the best shearers.

Diseases.—Sheep are liable to sickness in this as well as other counties; but I can say, from experience, that were sheep provided with open sheds in different parts of the farm, and enticed into them by some dry meat, either chaff or hay, many of their diseases would be totally prevented. Mr. Robarts asserts, that strong warm tea is a cure for the red-waters, given as soon as the sheep is seized.

SECT. III.—HORSES.

FEW horses in Cornwall are kept for ostentation, or to live in idleness and luxury. The gentleman's horse often disdains not to draw the cart or the plough, when not wanted for the coach or the chariot, thus the produce of his labour far exceeds his maintenance. The farm horses are excellently adapted to the hilly surface of the county; they are rather small, but hardy and active, and it may be truly said, they eat no idle oats. Most farmers keep up their stock, by breeding a colt or two annually; but I believe that one eighth of the horses used for the saddle and draught, are brought into the county by eastern dealers.

The Rev. Mr. Baynes, of Week St. Mary, has a team of Suffolk punches.

Food.—Lay-grass in summer; hay, straw, and oats, according to the ability, liberality, and humanity of their owners, in winter; carrots and ruta baga are in some instances given to horses. Farm-horses are as rude and cheap as they can be.

A wooden saddle, called a *pack*, for carrying sacks of corn, lime, or potatoes; and in some parts of the county over this saddle are slung, for the carrying of faggot-wood, poles, &c. short or long crooks, referred to in p. 40. The draught-harness for ploughs and harrows, consists of a straw collar, called a *hame*, with wooden collar-trees, to which are fastened rope-traces. No horse should be kept in any enclosed grounds after being shod and broke in to regular work; after this period, the stable in winter with food on chaff, consisting of cut-hay and oats, and a shed or enclosed yard in summer with lucern, tares, or clover, are the proper places and food for this animal, for the sake of the most rigid economy.

The article of manure alone, by this management, would astonish any one unaccustomed to the practice. This is no wild theory, I know it well from my own experience, and some respectable authorities, whose names, as real friends to agriculture, I have had frequent occasion to mention in this Report, can testify to the truth of it from their own practice.

SECT. IV.—PIGS.

A LARGE white, long-sided, razor-backed pig, I have been told, was the true Cornish breed: this has been crossed by the Devon, Suffolk, and Leicester breeds, which have taken off length and sharpness, and added breadth and depth; a mixture of Chinese and Suffolk, is another variety.

Mr. Tinney has a famous breed for porkers, Chinese, crossed by a half African boar: meat delicious. Mr. Robarts, of Newlyn, has half Devon and Leicester; these are valuable pigs. The pure Leicester sows are very unprolific, but fatten on little food; the breed of pigs, however, are mixed and intermixed as variously as the sheep.

I have to observe, in honour of the swinish race, that notwithstanding the general jumble, I have, in my progress through this county, met with very few bad pigs; they are all of them good grass-eaters, orchard and lane grubbers, and with this liberty of ranging, and a little kitchen offal, keep themselves in good store condition.

Boiled potatoes, with ground barley, or potatoes and scald-milk, are given warm as the fattening food, and continued according to the intention of the feeder, whether for pork or bacon; and when killed, they weigh from eight to thirty score.

The Rev. Mr. Walker has paid much attention to the improvement of this animal, and I have been very obligingly favoured with the annexed drawings of his present stock, and with the following observations.

The largest sow is of the Suffolk-breed; (*Plate* XII. *Fig.*

Fig. 1); the handsomest from Mr. Quartley, of Devonshire; (*Plate* XII. *Fig.* 2); and the other (*Plate* XIII.) from Mr. Grey, near Bath. Mr. Grey states, that his sort has been crossed with the wild boar of Jamaica, and I believe both his and Mr. Quartley's have some of the China blood in them: the Suffolk sow I have had many years, and have usually bred from her by a half Leicester boar, and the produce has been very valuable.

Since I purchased a boar of Mr. Grey's sort, I have bred from the Suffolk sow by him, and I do not think the produce so good as formerly, that is, the cross did not seem to hit. The full Grey sort is very valuable, feeding fast, and yielding meat of a superior quality. But nothing has answered so well, as the cross between the Quartley sow and the Grey boar; the produce seems to have every merit, and finer pigs, I believe, cannot be seen. It should be observed, that all these sorts are good graziers, living well in the house on cut grass, and a little wash once a day.

The annexed representation of a fat pig (*Plates* XIV. and XV.) with remarks thereon, were very obligingly communicated to the Surveyor by R. L. Gwatkin, Esq. of Killiow. The drawing was executed by the Rev. W. Gregor, of Creed.

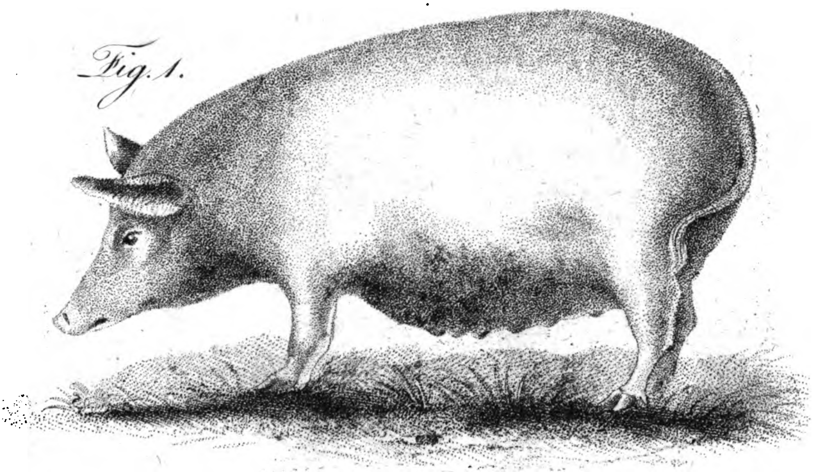
The following were the dimensions and weight of the pig, at ten months old, from a sow of E. Gordon Grey, Esq. near Bath, by a boar of Mr. Quartley's:

Two days before he was killed, he was in girth, four feet five inches; in length, three feet one inch. According to Renton, he should weigh 14 stone 4lb., equal to $201\frac{2}{5}$ lb.

He

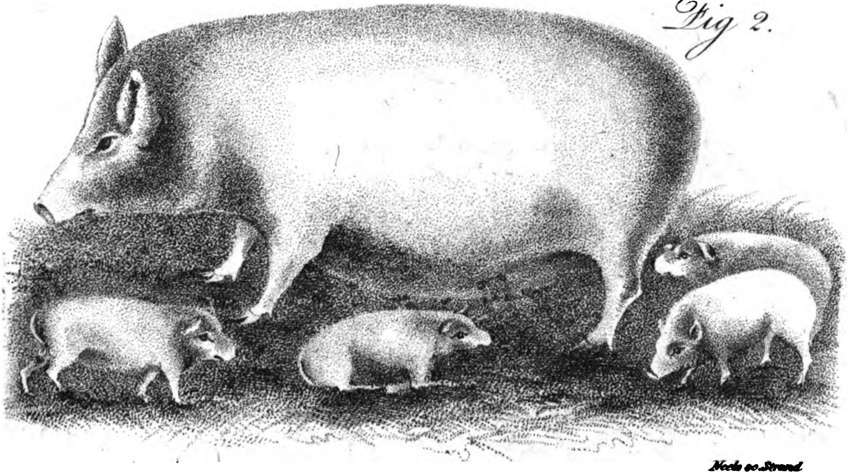
Suffolk Sow,
Property of Revd. Rt. Walker.

Fig. 1.



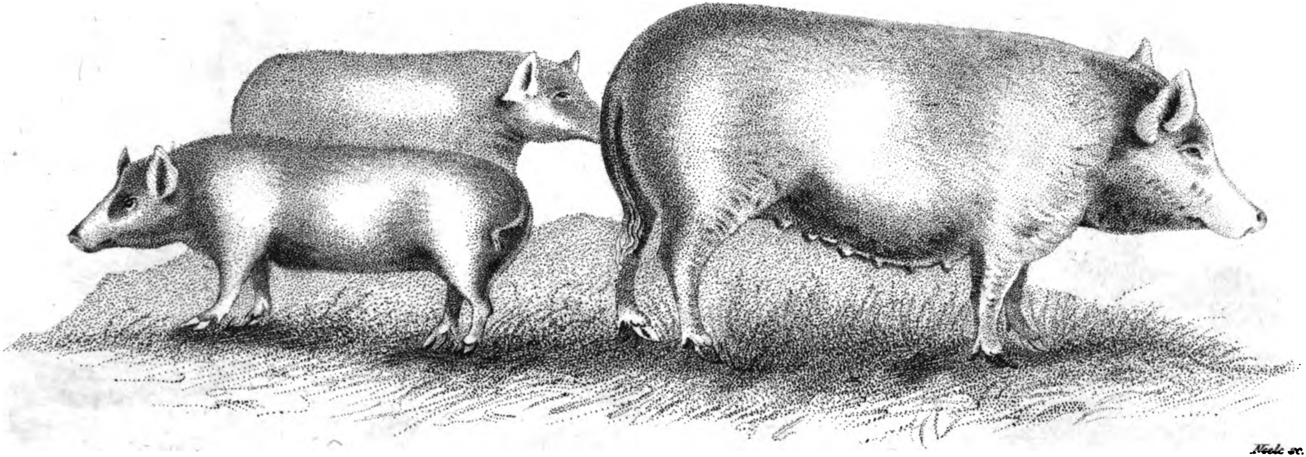
Sow from Devon,
Property of Revd. Rt. Walker.

Fig 2.



Neele sc. Strand

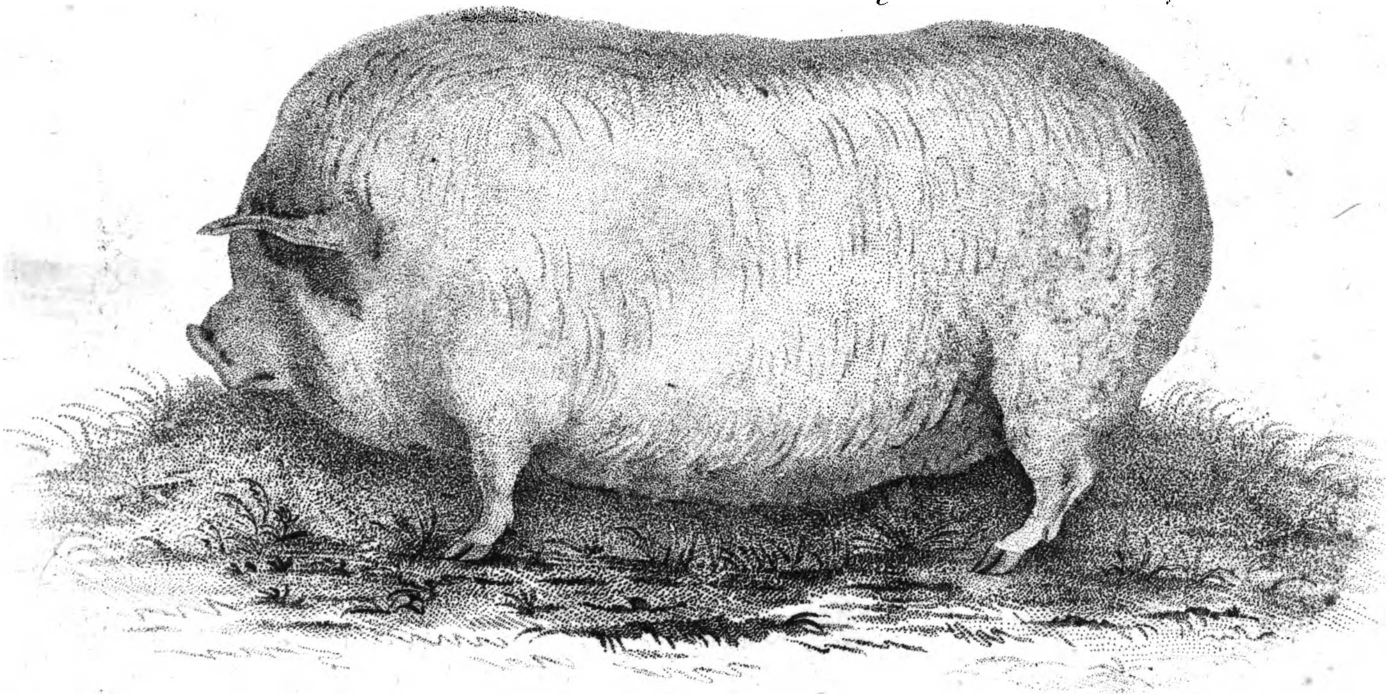
Sow from Bath;
the property of The Rev.d R.t Walker.



Neele sc. Strand.

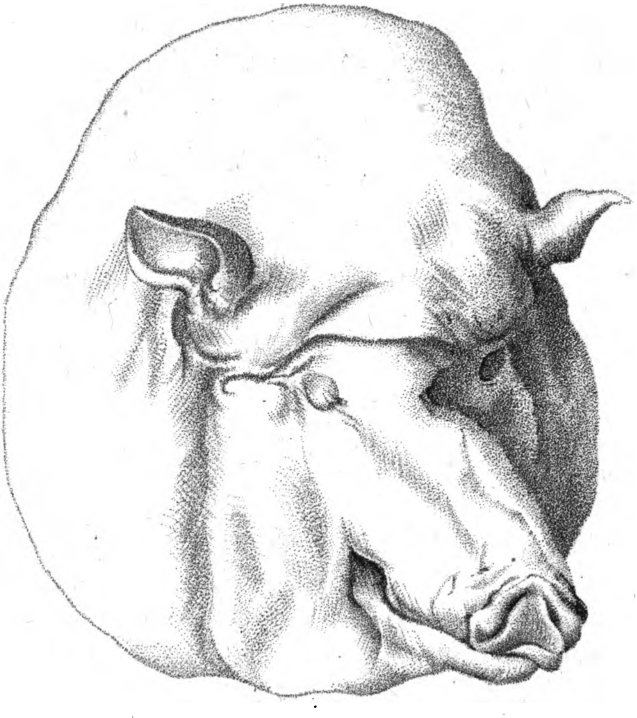
Mr. Gwatkin's Fat Pig.

Plate XIV. P. 156



Neele sc. Strand

The Heavy Head of
Mr Gwatkin's Fat Pig.



Neele sc. Strand.

He weighed when killed, fore-quarters, ...	47lb. 45
Hind quarters, ...	44 46
Head, ...	20
	202lb.

When dead and hung up, he measured from nose to tail, four feet two inches; girth of fore-leg above the knee, nine inches and an half; hind-leg above the hook, ten inches; the head measured from crown to nose, fourteen inches; from cheek to cheek, nineteen inches.

This pig was fed upon milk and potatoes, and finished with four and an half Winchester bushels of barley, ground, and left to grow sour with water, as recommended by Mr. Arthur Young in his Calendar.

Here again I presume to intrude an observation, similar to that in the last Section, on the keep of horses: surely this animal, disgustful and mischievous while alive, should be consigned to appropriate yards and sheds, where he might be fed with lucern, tares, or clover in the summer; and potatoes, Swedish turnips, &c. in the winter, with a steady view to that essential article manure, and to the security of the farmer's and his neighbour's crops; the present unwarrantable liberty of this animal should be abridged.

SECT V.—RABBITS.

These occupy the sandy hillocks and some of the rocky wastes, but to no great extent, nor is there any thing new or peculiar in this race of animals: they are the grey and black sorts.

SECT. VI. AND VII.—POULTRY AND PIGEONS.

Fowls, ducks, and geese, are bred in sufficient numbers to supply the inhabitants, and to admit of many being bought up by regraters, who come from Dock and Plymouth for that purpose.

SECT. VIII.—BEES.

A hive or two of bees are kept by farmers and cottagers, but nothing worthy notice has occurred.

CHAP. XIV.

RURAL ECONOMY.

THE agricultural labourers in Cornwall may be arranged in four classes—farm-servants, parish-apprentices, day-labourers, and a class, who do not steadily engage themselves with any master, but take bargains of work of every kind, and wherever they offer. The women, every where in the county, perform a large share of the rural labours, particularly the harvest-work, weeding the corn, hoeing turnips, potatoes, &c. attending the thrashing-machines; by the latter business they have more employment in the winter than they formerly had.

The prices of service and labour may vary a little in different parts of the county, but the following is nearly the average:—the farm-servants have from eight to twelve guineas a year, and their board; maid-servants rom three to four pounds per annum. The price of labour, of the hireling class, may be stated from nine to twelve shillings per week, with the privilege, which is a very general one, of a limited supply of corn for the consumption of his family, at a fixed rate, considerably under the market price. The women have from sixpence to eightpence per day.

The gettings of the bargain-taking class depend upon the quantity of work that they do in a given time, and, working always on their own account, they do more labour, and consequently earn more wages, than the hireling-class. Wages of all classes are generally the same, winter and summer. The hours of work from six to six in summer; and from day-break to dusk in the winter months; but, in the neighbourhood of mines and fisheries, the farmer must content himself with fewer hours of labour. In harvest-time they have meat and drink, in addition to the wages. Cutting of hay and corn by the acre the price varies, from 2*s*. to 3*s*. 6*d*. according to the crop, with a gallon of beer, or cyder.

Provisions.—The most common food of the labouring class is barley bread with tea, and salted fish. The pilchards, which are caught in great abundance on our coasts in the autumn, and cured for foreign markets, supply our poor also with wholesome and nutritive food; they are salted in the months of August and September, and thus are preserved throughout the year; they give a relish to the breakfast or tea, and are eaten with potatoes at the other meals of dinner or supper.

Many of the labourers, however, who gain better wages, or who are not burthened with large families, use wheaten bread, and are able to indulge in some meat for their pasties, as well as for their suppers, after their daily labour is done. They have an advantage also, from the great plenty of fish with which the markets abound. Indeed, the poor are in general better fed and clothed than in most other counties.

Fuel.—The principal article of fuel in the western parts of Cornwall is turf, furze, and Welsh coals; in the eastern part, hedge and coppice-wood, and coals. With the poor in Cornwall it may be said, this necessary article of comfort is scarce, and many of them are obliged to take a great deal of pains to collect a scanty burthen of miserable furze (a short kind called the Cornish) from the commons.

CHAP.

CHAP. XV.

POLITICAL ECONOMY;

AS CONNECTED WITH, OR AFFECTING, AGRICULTURE.

SECT. I.—ROADS.

THE two great post entrances into Cornwall are by Launceston and Tor Point: if you enter by the latter, you have to cross the harbour of Hamoaze, which, at times, is rough and turbulent; and the road, as far as Liskeard, is excessively hilly. The eastern travellers with whom I have associated at the different inns, during my perambulations, are of opinion, that the roads, with some few exceptions, are tolerably good throughout this county; much better than in many parts of Devonshire. They hoped I would notice, with reprehension, the straw-traps that the farmers lay in some of the cross-roads, and which, concealing the deep ruts, endanger their horses, gigs, and their own necks.

The quartzstone, so abundant in most parts of Cornwall, is an admirable material for repairing the roads. The road-rates in the hundred of Stratton are extremely oppressive to the inhabitants; there is not one turnpike within the district, and the immense number of carts that come out of Devonshire to Bude-haven for sand, ruin their roads, while, from there being no tolls, these Devonshire farmers do not contribute one farthing to their repairs.

The parochial roads are numerous, narrow, and intricate, some of them mere gullies, worn by torrents; their high banks, and tall overhanging hedgewood, render many of them dark labyrinths.

I have heard many travellers express a wish that there were more guide-posts in the county; indeed I have, myself, had frequent occasion to wish for such friendly monitors.

Bridges.—These are numerous in Cornwall, both for foot and horse travellers; those for foot passengers to cross the rivulets and deep gullies, consist only of one flat stone: if there was a rail to lay hold of, and painted white, they would be safer. On the whole, the bridges are kept in good repair. The largest in the county is Wade-bridge, which consists of sixteen Gothic arches, over the Camel and Alan united. The building of this bridge was owing to the public spirit of a Rev. Mr. Lovebon, vicar of Egloshayle.

SECT. II.—CANALS.

THERE is not a doubt, but that many advantages would accrue from two or three canals in Cornwall, and such have been talked of, and I believe projected upon *paper;* but there is a great doubt, whether the plans will be put in execution, at least, I have heard of no such laudable intention for the present, and perhaps such public-spirited works must remain to be accomplished in more peaceful days.

SECT. III. AND IV.—FAIRS AND WEEKLY MARKETS.

A List of the Fairs and Market Days in Cornwall.

Towns.	*Market Days.*	*Fair Days.*
St. Austel	Friday	Thursday before Easter, Whit-Thursday, July 23, October 16, November 30.
Bodmin	Saturday	Jan. 25, Saturday after Middle-Lent Sunday, Saturday before Palm-Sunday.
Bolingey	———	March 16.
Boscastle	———	August 5, November 22.
St. Blazcy	———	February 3.
Blistand	———	Monday nearest the 22d September.
Boyton	———	Monday fortnight after August 1.
Callington	Wednesday	First Tuesday in March, May 4, September 19, November 12.
Camborne	———	March 7, June 29, Nov. 11.
Camelford	Friday	Friday after March 10, May 20, July 17 and 18.
St. Columb	Thursday	Thursday after Mid-Lent Sunday, Thursday after Nov. 12.
East Looe	Saturday	Feb. 13, July 10, Sept. 4, Oct. 10.
St. Ewe	———	Thursday after April 7, Thursday after Nov. 4.
Falmouth	———	Thursday, Aug. 7, Oct. 10.
Fivelanes	———	Monday-week after June 24.
Fowey	———	Shrove Tuesday, May 1, Sept. 10.
St. Germans	Friday	May 28, Aug. 1.
Goldsithney	———	Aug. 5.
Grampound	———	Jan. 18, March 25, June 11.
Helstone	Saturday	Saturday before Mid-Lent Sunday, Saturday before Palm-Sunday, Whit-Monday, July 20, Sept. 9, Nov. 8, Dec. 11.
Haleworthy	———	Oct. 18.
St. Ives	Wednesday Saturday	Saturday before Advent.
Kilkhampton	———	Holy Thursday, that Day thre Weeks, Aug. 26.
Launceston	Saturday	First Thursday in March, third Thursday in April, Whit-Monday, July 5, Nov. 17, Dec. 6.
Landrake	———	July 19, Aug. 24.
Lelant	———	Aug. 15.
St. Lawrence	———	Aug. 21, Oct. 29 and 30.
Liskeard	———	Shrove Monday, Monday before Palm-Sunday, Holy Thursday, Aug. 15, Oct. 2, Monday after Dec. 6.
Lanreath	———	Nov. 18, Whit-Tuesday.
Lower St. Columb	———	July 9.
Lostwithiel	Friday	July 10, Sept. 4, Nov. 13.
Marham Church	———	March 25, Aug. 12.
St. Martin	———	Feb. 13.

Towns.	*Market Days.*	*Fair Days.*
Marketgew	Saturday	Thursday-three-weeks before Easter, Sept. 29.
Marazion		
St. Marbyn	———	Feb. 13.
Menhenniot	———	April 23, June 11, July 28.
Milbrook	———	May 1, Sept. 29.
Mitchell	———	Oct. 15.
St. Neot	———	May 5, Easter Monday, Nov. 5.
Newlyn	———	Nov. 8.
Northill	———	Sept. 8 (if on Friday or Saturday, the Monday after), first Thursday in November.
Padstow	Saturday	April 29, Oct. 1.
Penrose	———	Tuesday before Ascension.
Piranzabuloe	———	March 16.
Penryn	Wednesday Friday Saturday	May 1, July 7, Dec. 21.
Penzance	Thursday	Thursday after Trinity Sunday, Thursday before Advent.
Pelynt	———	June 24.
Poundstock	———	Monday before Ascension.
Polperro	———	June 29.
Port Isaac	———	Holy Thursday.
Pillaton	———	Whit-Tuesday.
Probus	———	April 5 and 23, July 5, Sept. 17.
Poundscoss	———	Last Monday in November.
Redruth	———	May 2, Aug. 3, Sept. 5, Oct. 12.
Saltash	Saturday	Feb. 2, July 25, Tuesday before Christmas, Tuesday before Lady-Day, Tuesday before Midsummer, Tuesday before Michaelmas.
South Petherwin	———	Second Tuesday in May, second Tuesday in October.
Stockertimsland	———	May 29.
Stratton	Tuesday	May 19, Nov. 8, Dec. 11.
St. Stephens	———	May 12, July 31, Sept. 25.
Summercourt	———	Holy Thursday, July 28, Sept. 25.
St. Teath	———	First Tuesday in July.
Trewardreath	———	July 19.
Treganatha	———	May 6, Aug. 1.
Tintagell, or Trevena	———	Monday after Oct. 19.
Tregony	Saturday	Shrove Tuesday, May 3, July 25, Sept. 1, Nov. 6.
Tresillian Bridge	———	Second Monday in February, Monday before Whit-Sunday, (if on May 12, Monday fortnight after).
Trew	———	Holy Thursday, July 25.
Trewan	———	May 1, Oct. 10.
St. Tudy	———	May 20, Sept. 14.
St. Veep	———	Wednesday before June 24.
Truro	Wednesday Saturday	Wednesday after Mid-Lent Sunday, Wednesday in Whitsun Week, Nov. 19, Dec. 8.
Wade-bridge	———	May 12, June 22, Oct. 10.
West Looe	———	May 6.
Week St. Mary	———	July 29, Sept. 15, Wednesday before Christmas.
Wainhouse Corner	———	June 24, Sept. 29.

SECT. V.—COMMERCE.

As our manufactures are but few, much commercial enterprise will hardly be expected; yet there are merchants in Cornwall who are enterprising, and who deal as largely as any in the kingdom; London, and a few of the other large trading towns, only excepted.

The principal places of trade are Padstow, Boscastle, and the river Hayle, on the north coast; Penzance, Falmouth, Truro, Fowey, and Looe, on the south. The three great staple commodities for export, are tin, fish, and copper, the moor-stone, China-stone for porcelain; barley, oats, potatoes, and some wheat. The imports are, goods and groceries from London, Bristol, and Manchester; coals, balk, iron, and other various articles. Great quantities of flower are annually imported at Falmouth and Penryn, chiefly for the use of the miners. It is generally supposed, that Cornwall is deficient in its produce of wheat, in proportion to its inhabitants; but of barley, oats, and potatoes, it grows much more than it consumes. A great many neat cattle, pigs, and some sheep, are driven annually out of the county.

SECT. VI.—MANUFACTURES.

These are very few and inconsiderable; some coarse woollen, several paper, and a carpet manufactory, make up the principal.

SECT. VII.—POOR.

FROM the few manufactures in the county, the poor are not numerous, excepting in the mining parishes; nor are the rates heavy, if compared with those of many other parts of the kingdom: from 2*s*. 6*d*. to 3*s*. in the pound of the rental, may be about the usual rate of the county; but in the mining districts, the poor-rates are very high, sometimes up to 10*s*. or 12*s*. in the pound; however, the land proprietors who have been benefited by the mines, have of late years been obliged, by contributing to the rates, to lighten the oppressive burthen.

HUNDRED OF POWDER, PARISH OF VERYAN, DISTRICT OF ROSELAND.

A TABLE, *shewing the State of Population at different Periods, on an Average of Seven Years respectively, with the Amount of the Poor-Rate in the corresponding Years, and the progressive Increase thereof, together with the Proportion of Poor to the Population, in the respective Periods, with Observations thereon.*

	An. Dom.	*No. of Baptisms.*	*No. of Burials.*	*No. of Merriages.*	*No. of Poor in Weekly Pay.*	*Amount of Weekly Pay.*	*Amount of Poor Rate in each Year.*	*Amount of Population.*	*Proportion of Paupers to the Population.*
							£. s. d.		
First Period.	1646	—	- -	- -	- -	- -	17 9 0	20×43*=860	No Account of the Poor, or of the Weekly Pay.
	1652	17	- -	- -	- -	- -	12 12 7		
	1653	—	The Register is altogether imperfect, a few scattered Leaves only remaining.				13 6 4		
	1654	23					15 10 5		
	1655	31	- -	- -	- -	- -	18 16 0		
	1656	16	- -	- -	- -	- -	20 15 3		
	1660	—	- -	- -	- -	- -	22 1 11		
	Average	20					£.17 4 6	860	

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* The most accurate calculators in political arithmetic, have been accustomed to multiply the number of births by 26, in order to ascertain the population of given places, applying this calculation to M. Cassine's Chart. But this would by no means produce a fair result in the present case. In order to obtain an estimate of the population of this parish in the several periods adduced, I have multiplied the average of baptisms, of each period of seven years, by 43. And I have used this number, because, on applying it as a multiplier in the two last periods, I found its product to correspond nearly with the actual numeration, which, having previously ascertained, was my reason for so applying it. Perhaps this high number is applicable chiefly to places circumstanced as the one under consideration. In more populous, or fluctuating societies, a lower number would produce a more faithful result.—This however, seems to argue the uncertainty of the principle.

	An. Dom.	*No. of Baptisms.*	*No. of Burials.*	*No. of Marriages.*	*No. of Poor in Weekly Pay.*	*Amount of Weekly Pay.*	*Amount of Poor Rate in each Year.*	*Amount of Population.*	*Proportion of Paupers to the Population.*
							£. s. d.		
Second Period.	1685	28	17	7	Deficient.		36 19 8	25½×43=1096	No Account of the Poor, or of the Weekly Pay.
	1686	24	19	5			33 18 6		
	1687	22	31	3			37 14 11		
	1688	21	17	5			40 5 10		
	1689	31	23	8			27 16 10		
	1690	25	31	7			38 5 2		
	1691	28	21	11			28 19 7		
	Average	25½	23	6½			£. 34 17 2½	1096	
						s. d.	£. s. d.		
Third Period.	1720	10	12	3	7	10 6	64 4 4	18×43=774	9 to 774
	1721	23	12	4	11	14 0	50 9 2		
	1722	20	15	8	6	9 9	58 13 6		
	1723	17	16	2	8	10 6	49 10 4		
	1724	14	26	0	9	13 3	61 2 3		
	1725	24	12	2	10	16 0	80 18 8½		
	1726	17	20	9	11	15 6	80 6 4		
	Average	18	16	4	9	12 9	£. 63 12 1	774	*1 in 86

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* In Bristol the proportion of paupers, who receive weekly pay, is as one to twenty of the inhabitants. In Kendal, Westmoreland, 1-56th part of the whole are paupers, living in the workhouse. Vide Report, 282. Bishop Watson's statement.

In the parish under review, it appears that at this time every thirty-second person is chargeable on the Poor-rate; and this, in a parish wholly agricultural, and where there are two friendly societies of upwards of 100 members each, which at present save the payers to the poor-rate 50*l.* per annum at least. It scarce need be remarked, that the poor are taken great care of, and are amongst the oldest livers. The farmer indeed feels the heavy and increasing burthen, and submits to its necessity, deriving however this satisfaction, that his industry supports the worn-out labourer, and that by his aid the aged poor terminate their lives in comfort.

	An. Dom.	*No. of Baptisms.*	*No. of Burials.*	*No. of Marriages.*	*No. of Poor in Weekly Pay.*	*Amount of Weekly Pay.*	*Amount of Poor Rate in each Year.*	*Amount of Population.*	*Proportion of Paupers to the Population.*
						£. s. d.	£. s. d.		
Fourth Period.	1733	22	19	5	13	1 0 3	117 12 0	19×43=817	9½ to 817
	1734	17	24	3	14	1 0 3	82 18 4½		
	1735	16	24	3	10	0 13 3	69 16 6½		
	1736	18	14	7	7	0 9 0	57 7 9		
	1737	22	17	1	8	0 12 0	51 6 10½		
	1738	18	20	10	8	0 12 3	58 11 4½		
	1739	18	23	3	6	0 10 3	64 18 10		
	Average	19	20	4½	9½	£.0 14 0	£.71 16 0	817	1 in 86
Fifth Period.	1782	25	12	7	22	1 16 6	277 16 3½	23×43=989	24 to 989
	1783	21	13	5	23	1 18 3	293 10 7½		
	1784	24	13	5	22	2 1 6	220 10 11½		
	1785	21	10	4	24	2 8 6	285 5 7		
	1786	20	11	7	23	2 6 0	248 18 2		
	1787	24	11	6	26	2 18 6	274 6 11½		
	1788	24	14	10	26	2 19 8	273 9 11½		
	Average	23	12	6¼	24	£.2 7 0	£.267 14 1	989	1 in 44 1-5th

	An. Dom.	No. of Baptisms.	No. of Burials.	No. of Marriages.	No. of Poor in Weekly Pay.	Amount of Weekly Pay.	Amount of Poor Rate in each Year.	Amount of Population.	Proportion of Paupers to the Population.
						£. s. d.	£. s. d.		
Sixth Period.	1802	32	15	10	34	3 17 0	526 5 10	28 × 43 = 1203	38½ to 1203
	1803	22	16	13	30	3 1 10	396 0 3½		
	1804	33	8	2	31	3 7 4	429 9 6¼		
	1805	24	7	9	40	4 2 10	428 8 11¼		
	1806	33	16	7	43	4 10 2	456 13 9¼		
	1807	24	18	10	45	4 15 10	504 8 6		
	1808	30	19	7	46	4 17 8	535 5 5½		
	Average	28*	13½	8¼†	‡38½	£.4 1 9	£.468 1 7½	1203	1 in 31¼

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* The fecundity of our marriages does not exceed that of other places, one marriage producing only three children on an average, the obvious increase of population therefore depends on the deaths being fewer, or on the general healthiness of the climate.

† By a calculation of M. Acerbi, it appears that the proportion of bastards to legitimate births is as 1 to 45 throughout Sweden. In the islands of Aland 1 to 53; in Stockholm and Abo 1 to 6, or every 6th birth, illegitimate. In the last 30 years, 1 in 21 births, was illegitimate in the above parish; in the preceding 30 years, 1 in 20 illegitimate. Some amelioration, the increased population considered!

‡ Children inclusive.

SECT. VIII.—POPULATION.

"That the life and health of man is naturally affected by the scite and atmosphere of a country, is universally allowed. This county being almost encompassed by the sea, is subject to frequent and sudden changes of weather, but as these changes are generally the attendants of our storms, they occasion very little alteration in the general temperature, so that the health of the inhabitants is less affected thereby than might be expected. The air is clear, healthy, and sharp, when the wind blows from the northern and eastern points; when from the western and southern, it gives a mild humid atmosphere, very congenial to the sensations of the people; and though the saltness of our air has been supposed prejudicial to health, there are perhaps as many instances of long and vigorous life occurring in Cornwall, as in any portion of the habitable globe.

"On the sea-coasts, particularly where the lands are all enclosed and cultivated, the inhabitants continue strong, healthy, and active, to a good old age. The following data, from the register of the parish of Veryan, in the district of Roseland, afford a fair estimate of the state of other parishes in the county, situated as this is, on the sea-coast. It is high, dry, and elevated land, abutting on the English Channel for an extent of coast of about five or six miles, consisting of near 5000 statute acres wholly enclosed and cultivated; the soil a friable loam, on a schist or shelfy substratum.

"The population in the present year (1810) amounts to 1220 by actual numeration; the number of families 219, or 5½ persons to a family.

" Amount of marriages for thirty years, from June 1778 to May 1808 inclusive, 198, or 6½ yearly.

" Amount of baptisms in the said thirty years, ending May 1808:

Males 362 } 718; averaging 24 yearly. Birth
Females 356 } of males exceeding females, six.

" Amount of burials in the said 30 years:

Males 207 } 434; averaging 15 yearly. Burials
Females 227 } of females exceeding males, 20.

" Increase by excess of births in these 30 years 284, or 9½ yearly.

" Of the above 434 buried during 30 years of my ministry to May 1808, all averaged 46 years, although 60 were infants under one year old. These infants I do not include in the following computation.

" The register is accurately kept, and it appears thereby, that of the remaining 374 persons,

161 women lived 10,911 years, or 56 years each, and fractional parts.

183 men lived 9987 years, or 54 years each, and fractional parts.

" The whole who were buried in 30 years (infants exclusive), averaging 55¼ years.

" In the detail it appears, that of these 374 persons,

7 exceeded 90 years }
54 ——— 80 — } The intermediate years inclusive.
139 ——— 70 — }
189 ——— 60 — }
204 ——— 50 — }

"The actual result is, that of all who died in the above 30 years (infants exclusive),

1 in 53½	exceeded	90 years of age.
1 in 7	——	80* do.; 1 in 8 infants inclusive.
1 in 2¾	——	70 do.
Nearly one-half	——	60 do.
Considerably above one-half	——	50 do.

"The deaths from disease and casualties, in these 30 years, appear to be,

Smallpox	15	
Measles	4	
Fever	25,	typhus, pneumonia, and malignant sore throat.
Consumption	10	in every case hereditary.
Child-bed	5	
Sudden	9	or about one in 50.
Accident	3	

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* "It was a saying of Dr. Cadogan's, that the life of man is not properly 70 but 90 years; 30 to go up, 30 to stand still, and 30 to go down; and I believe, adds Jonas Hanway, it may be near the mark, supposing men to live in the best climates of the earth, and these temperately. But taking things as they are, we find that of 1000 born, 785 are dead by the age of 50, or near four in five, and only 27 live to the age of 80, or 1 in 32."—*Virtue in Humble Life.*

By the London Bills of Mortality it appears, that upon an average of every five years for 40 years (ending 1788), one in 40 of all that are born, lives to 80. By the Tables in Dr. Price's Essays on Reversionary Payments, &c. the duration of life is still more favourable at Northampton, and other places in the country, where correct registers are kept; in particular at the village of Holy Cross, in Shropshire, one in 24 attains the age of 80.

In the above instance, one in eight of all that were born, exceeded 80; the adults averaged 64 years each.

Drowned	4
Hernia	1
Croop	2
Infants under one year old	60

"The two years 1798 and 1782 present the following instances of longevity. In 1798 there were eight persons only buried; the venerable record of their ages stands thus, 94, 91, 74, 70, 67, 67, 64, 33, averaging nearly 70 years. The baptisms in this year were 24; treble the number of burials.

"In 1782 twelve were buried, two of them children, the remaining ten averaged 71 years and six months, viz. 90, 82, 81, 81, 78, 76, 75, 71, 66, 33. The baptisms in this year were 25.

"In 1794 there were six brothers living in this parish (four of them in the same cottage), whose ages together amounted to 462 years, averaging 77 each, the four oldest made up 333 years, or upwards of 83 each, perhaps the most singular instance in record. In 1795 two of this family of the Quintrels, with two other venerable neighbours then alive, averaged 90 years each.

"Of 129 persons buried within the last ten years, ending December 1809, there were thirteen infants under one year old; of these I take no notice; of the remaining 116, 73 exceeded half a century, and averaged upwards of 71 years, viz.

1	lived betwixt	90	and	100	years.
17	———	80	—	90	——
25	———	70	—	80	——
21	———	60	—	70	——
9	———	50	—	60	——
73					

"And of the whole 116, the result is, that more than half exceeded 60 years, less than every third person exceeded 70, and one in 6½ exceeded 80. As the population in this period of ten years averaged 1014, one in 78 died, infants included; but as I do not consider the estimate affected by them, I take the average of the 116 who died in these ten years at 11½ per annum, which, to 1014, is as 1 to 88. Now the baptisms in these ten years were 267, or 26$\frac{4}{10}$ yearly, which were nine more than double the burials.

"Of the 1220 inhabitants now living, there are more than one-sixth part (viz. 232) who exceed 50 years of age, viz.

There are now living	1	betwixt	90	and	100	years.
————	13	———	80	—	90	——
————	40	———	70	—	80	——
————	64	———	60	—	70	——
————	114	———	50	—	60	——.
	232					

"Acerbi, in his Travels through Sweden, speaking of the health and longevity of the inhabitants of the island of Aland, in the Gulph of Bothnia, observes, 'that they live to a very great age, and states in proof, that one-sixth part of the whole inhabitants were above 50 years old, the population 11,250.' *Vol.* i. p. 197.

"Perhaps the proportion of deaths, to the sum total of the living, is less than has been recorded in any political computation whatever, being as 13½ to 1220, or 1 to 90.

"To form some criterion of the increase of population and comparative longevity from the foregoing data, a brief sketch of their statistical accounts may be useful. Dr. Haygarth has given a curious and accurate account in the Philosophical Transactions, vol. lxviii. p. 131, of the healthiness of the city of Chester, the population of which he states at 14,713; yet the mortality is only 1 in 40 dying annually. Mr. A. Young states, that in several parishes in the neighbourhood of Bradfield Hall, Suffolk, 1 in 40 dying annually was common; in Lowestoff, 1 in 46. In his own parish, Bradfield Combust, a population of 125 souls, 1 in 62 died annually. 'The mortality of this place is less, therefore (he adds), than that of any other yet published, Monton only excepted.' Vide *Annals of Agriculture*, No. 41. On the Continent, in the boasted province of the Pays de Vaud (Switzerland), 1 in 45 dies annually. In Sweden, the only kingdom where bills of mortality are carefully kept and compared with actual numeration, the average number for 21 years was 2,310,160; the births 90,245, or nearly 1 in 25$\frac{5}{9}$: the deaths 66,759, or 1 in 34$\frac{3}{5}$. In Russia, in the archbishopric of Woronesch, according to Professor Herrmann, 1 in 79$\frac{6}{11}$. In Cornwall, that is, on the south coast, by the foregoing data, 1 in 90 is the actual proportion of deaths to the sum total of the living.

"Mr. A. Young has observed, that an increase of people amounting to *one-fourth of the births* in ten years, is very great. In the above ten years, ending December 1809, the increase was *more than one-half* of the births, although in a time of war.

"The most sanguine enthusiast in the cause of populousness, can hardly wish for a more rapid increase. How far such facts may excite the apprehension of politicians, is one consideration; another may be, that in such instances, the best powers of the agriculturist should be roused to action; for if the population of a parish, wholly enclosed and cultivated, does increase one-fourth part of its aggregate in the space of thirty years, it must be an imperative duty on the inhabitants, *abstractedly considered*, to make what lands they have more productive.

> "Lest those whom sickness spares, with hunger die."

"Upon the whole, I attribute this great increase of population, and regular course of protracted life, to an improved agriculture, more regular employment, better food, diseases less fatal, a decreasing use of ardent spirits, and no law-suits. And where the same causes prevail, I have little doubt much the same results will be found throughout this county."—*J. T.*

CHAP. XVI.

OBSTACLES TO IMPROVEMENTS.

1st, *Tithes.*—There can be no doubt that tithes, especially when taken in kind, are an obstacle to improvement; fortunately, however, for the interest of agriculture in this county, all the Clergy, and most of the lay impropriators, compound with the occupiers of land, on the moderate terms already stated, p. 32 & 33.

2d, *Taxes.*—The recently increased duties upon hops, have discouraged their growth, and although not much to be lamented, their culture is on this account greatly on the decline.

The Property Act, 46 Geo. III. chap. 65, directs an assessment of the annual value of lands, to be made in every alternate year. This subjects the industrious farmer to a varied and increasing taxation upon his improvements. And however politic it may be, as a measure of finance, it operates specially on the efforts of the rack-renter; whose temporary profits, after a certain period, are put upon a footing as to impost, with the permanent income of his landlord; and thereby the spirit of enterprise is damped, and an obstacle to improvements in agriculture necessarily induced.

3d, *Poor-Rates.*—The serious increase of the poor-rates, especially since the decline of the carding and spinning employment, and since so many burthens have been thrown on it for raising soldiers and seamen, and for the support of the families of militiamen, must operate as a check to improvement.

4th, Leases.—A great obstacle to improvement, arises from the prevailing system of leasing for lives, for reasons assigned at p. 18.

5th, Want of Capital.—It has been often observed, that greater encouragement is given to the employment of capital in other branches of business than in agriculture. To the many advantages which it has attained as a science, by gentlemen cultivating their own estates, may be added the very essential benefit of a great increase of capital, by which extensive and permanent improvements have been effected; and it is to be hoped that the spirit which has arisen will go on increasing, until this source of national wealth has its due and sufficient share of capital.

6th, The observations which perpetually occur against mining, as an obstacle to improvement, amongst over-jealous friends to agriculture, require some animadversion. Where the mines are situated, they undoubtedly spoil some good land; but the mines are generally situated in the poorest part of our county. In spite however of these natural disadvantages, every where in the neighbourhood of them may be seen excellent crops of corn, crops produced by the labour and savings of the industrious miner; on spots which, in any other county, or under any other circumstances, must have remained in a state of perpetual barrenness: and the fact is, that some of our greatest improvements in agriculture, have been made by profits from the mines, and from the trade which they create and maintain.

CHAP. XVII.

MISCELLANEOUS OBSERVATIONS.

SECT. I.—AGRICULTURAL SOCIETIES.

THE Cornwall Agricultural Society has been frequently mentioned in these papers. It was established in the year 1793, has been supported with great spirit, and been attended with very beneficial effects in the encouragement of agriculture throughout the county; and it has never been in a more flourishing state than at present.

SECT. II.—WEIGHTS AND MEASURES.

DIVERS weights and measures prevail throughout Cornwall, to a mischievous and vexatious degree, and are productive of much inconvenience, perplexity, and error. They are a snare to the ignorant, a handle for the artful, and equally injurious to the individual and the community. Of all those who have regard to fairness and justness in their dealings, a uniformity of weights and measures is the universal and ardent wish.

Corn is sold in the eastern parts of Cornwall by the double Winchester of 16 gallons, and in the western parts by the treble Winchester of 24 gallons; oats by the hogshead of nine Winchesters; but with some farmers, the double Winchester will run 17 or 17½ gallons.

lons. Again, if a farmer in the eastern part of Cornwall buys a bushel of seed-wheat from the western farmers, it will run short a gallon or two by the eastern measure. Butter is generally sold at 18oz. to the pound. The customary perch for land-measure is also 18 feet; but this is giving way to the statute perch of 16½ feet.

These variations in weights and measures are a frequent source of complaint. But there is a statute, with a penalty against selling corn by any but the Winchester bushel of eight gallons; and a legal pound of meat or of butter must weigh 16oz.; and it is hoped the remedy will soon be applied to these evils, by a general enforcement of the statutes already provided.

CONCLUSION.

MEANS OF IMPROVEMENT,

AND THE MEASURES CALCULATED FOR THAT PURPOSE.

THAT a general enclosure bill would be a great means of improvement, by removing the difficulties which occur in the division of commons and mixed property, there can be little doubt. But here a most important question arises, of what benefit would this be to the nation at large? It may be taken as a proposition generally true, that whatever tends to enrich individuals, without taking from other individuals, enriches the country. If therefore a man, by enclosing a piece of coarse land adjoining to his estate, adds to his profits, he enriches both himself and his country; but this is not to be done without laying out some capital; the hedging, &c. necessarily cause some expense. Now it has always been a very doubtful point, whether by so laying out this money, a larger profit is obtained, than by expending the same sum in labour, manure, &c. upon the lands already enclosed. But in the case of a new enclosure, where new farms are made, and new farm buildings are erected, a fresh capital is drawn to agriculture, and a new power of improvement created; for every farm, under proper management, is capable of producing within itself a sufficient quantity of manure to support its course of crops, and to keep it in a constant state of improvement.

Commodious farm-yards, in which this county is very deficient, would be a great encouragement to agriculture; and as many proprietors have built farm-yards for themselves upon improved plans, it is to be hoped, that land-holders will be more generally induced to provide their tenants with this necessary appendage to their farms.

APPENDIX.

No. I.

C. R.

To the Inhabitants of the County of Cornwall.

WE are so highly sensible of the extraordinary merit of our county of Cornwall, of their zeal for the defence of our person, and the just rights of our Crown, in a time when we could contribute so little to our own defence, or their assistance; in a time when not only no reward appeared, but great and probable dangers were threatened to obedience and loyalty; of their great and eminent courage and patience in their indefatigable prosecution of their great work against so potent an enemy, backed with so strong, rich, and populous cities, and so plentifully furnished and supplied with men, arms, money, ammunition, and provision of all kinds; and of the wonderful success with which it pleased Almighty God (though with the loss of some most eminent persons, who shall never be forgotten by us) to reward their loyalty and patience by many strange victories over their and our enemies, in despight of all human probability and all imaginable disadvantage, that as we cannot be forgetful of so great desert, so we cannot but desire to publish it to all the world, and perpetuate to all time the memory of their merits, and of our acceptance of the same; and to that end, we do hereby render our royal thanks to that our county, in the most public and lasting manner we can devise; commanding copies hereof to be printed and published, and one of them to be read in every church and chapel therein, and to be kept for ever, as a record in the same; that as long as the history of these times, and of this nation, shall continue, the memory of how much that county hath merited from us and our crown, may be delivered with it to posterity.

Given at our Camp at Sudly Castle,
the 10th of September, 1643.

No. II.

The Surveyor has been favoured with the following statement, by Francis Gregor, Esq.

A Comparative Statement of the respective Values of Land producing Coppice Wood, and of Land employed according to ordinary Cultivation, estimated per Acre.

" Any person who is acquainted with the common rules of algebra, and the summation of series, will know, that the present value in years' purchase of an annual rent or annuity, is generally expressed by the fraction $\frac{1}{r^n - 1}$, where r expresses the value of 1*l.*, *and its interest for a year*, and n the period or number of years on the expiration of which each successive payment is to be made.

“If one payment be made at the *commencement of the first period*, this value in years' purchase will be increased by one, and will be $1+\frac{1}{r^n-1}$.

“Before I proceed to apply this general doctrine to the case of coppice woods, I will give the most simple illustration of it. Let interest be four per cent., or in other words, let $r=1.04$, and let $n=1$—then $\frac{1}{r^n-1}=\frac{1}{.04}=25$ years' purchase.

“If one year's rent be payable at the *commencement of the first year*, and not on its termination, the value will be 26, instead of 25 years' purchase.

“The application of this general theorem to the cases of the value of the land on which coppice woods grow, is founded on the following principle. Land in its usual mode of cultivation, yielding a return every year, pays an annual rent. The land on which coppice wood grows, making a return every 25 or 20 years, as the case may be, is to be considered in the same view as land paying rent every 25 or 20 years; in this view, n in the first case $=25$, and by calculation (supposing interest at 4*l.* per cent.) $\frac{1}{1.4^{25}-1}=.6$, or $\frac{6}{10}$ths of the value of one felling, or rent, if it may be so called, on the supposition that *this* first rent is payable not till after the expiration of the first 25 years.

“If this first rent is payable at the *commencement* of the term, the perpetuity will $=1.6$ years' purchase.

“From these data an accurate comparison may be made between the value of land paying rent every year, and land on which coppice grows, making a return every 25 or 20 years. Let $R=$ rent of land per acre;

and suppose one acre of coppice when fit to fell, is worth 30*l.*, then in the first case, *$.6\times 30=25\times R$, and $R=\frac{.6\times 30}{25}=.72l.=14s.\ 4\frac{3}{4}d.$; in the second case, $1.6\times 30=25\times R$, and $R=\frac{1.6\times 30}{25}=1.92l.=1l.\ 18s.\ 4\frac{3}{4}d.$ Therefore coppice wood in the two several cases mentioned, is in strict calculation, according to its highest or lowest state of growth, equal in value to land either of 1*l.* 18*s.* 4¾*d.*, or 14*s.* 4¾*d.* value per acre. The above rule applies only to the extreme cases of the highest and lowest value; but the intermediate values are easily obtained from it.

" Suppose a coppice of 15 years' growth, and that ten years must therefore pass, before it will sell for 30*l.* per acre: it is clear here, that the requisite value will be found, by discounting the highest value at four per cent. for ten years. The value of 1*l.*, to be received after ten years, is found by the tables to be, at this rate of interest, worth $.67\frac{67}{100}$ of a pound; therefore the required value of land per acre in this case, will be $.6l.\times 1.92=1l.\ 5s.\ 8\frac{1}{2}d.$ It may be seen from these instances, how very erroneous any practice must be, that assumes an equivalent value in common agricultural land, for land in coppice woods, except the actual period of the growth to maturity, and its growth at the time of making the value, be accurately taken as a basis of the calculation.

" Suppose the coppice be in such a state, *so situated* that 20 years will bring it to maturity, here $n=20$; and by pursuing precisely the same calculation at 30*l.* per acre, the highest value, *i. e.* when there is a crop fit to cut, will be equivalent to land per acre *2l. 4s. 1¾d.*

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* $.6\times 30$ is the perpetuity of the coppice land; $25\times R$ (taken as the rent of land per acre) = perpetuity of the land: by assuming them as equal, you find the value of *R*.

The lowest when just cut, 1*l.* 0*s.* 1¾*d.*

The intermediate, when ten years are wanting, 1*l.* 9*s.* 6½*d.* [*]

No. III.

Spring Wheat.

SPRING, or summer wheat *(triticum æstivum)*, has been cultivated in this county, on a small scale, during a few years; and the culture is rapidly increasing. Two sorts of seed were at first procured; or, to speak more accurately, the same sort, with this difference, that, the one parcel produced heads of corn chiefly awned or bearded; whilst those grown from the other parcel, were nearly free from awns; and the latter afforded a finer grain, and a better sample than the former.

The directions given with the parcel of seed sent first into the county, were, that it should not be sown earlier than the last week in April, and even so late as the 6th of May; under the idea that the grain was so delicate, as to be liable to be injured by the spring frosts; but it is now found that the frosts of this climate are not severe enough to do it any injury, if it be sown in the middle of April, or even at an earlier season; and by an earlier sowing, the weight of the crop is increased; perhaps the best season for sowing is the time of the early barley tillage.

---

[*] "The lowest perpetuity, = .84 years' purchase.
The highest, = 1.84 ditto.

Hence $\frac{.84 \times 30}{25} = R$, and $R = 1.008l. = 1l.\ 0s.\ 1\frac{3}{4}d.$

And $\frac{\overline{1.84} \times 30}{25} = R$, and $R = 2.208l. = 2l.\ 4s.\ 1\frac{3}{4}d.$"

The land for this crop ought to be richly manured and well broken, for as the plant does not tiller (spread) like the common wheat, it will not flourish upon a single ploughing, after turning to rot. (See the mode of putting in wheat.) For the same reason—that it does not tiller—a larger quantity of seed must be sown than of the common wheat; a Cornish bushel (24 gallons) to the customary acre, or 21 or 22 gallons to the statute acre, not being too much. If a piece of ley ground be broken up for this crop, care should be taken that it be clean as well as rich; for as it requires much tillage, if the land be foul, or subject to weeds, the crop will be in danger of being choaked by them. The best place therefore for the crop in the rotation, is found to be after potatoes or turnips; and grass seeds grow particularly well under it.

Under this management it is very productive, not subject to rust, weighty, and returns well at the mill. Its produce is from seven to twelve Cornish bushels per acre, and its weight 180 lb. or 60 lb. per Winchester bushel*.

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* This is nearly about the weight of the Cornish red wheat, the white wheat seldom being so heavy.

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